Consumers' Research

BULLETIN

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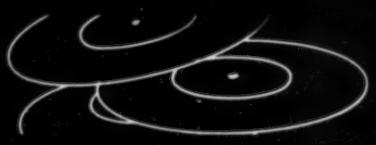

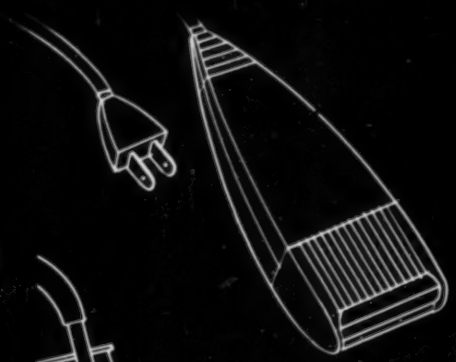

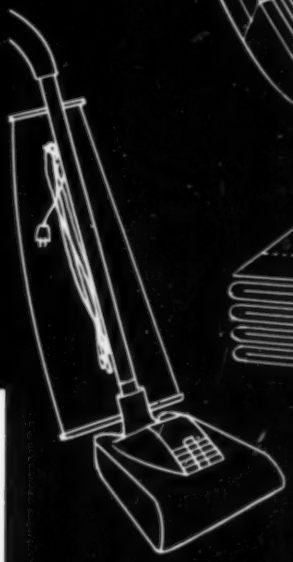

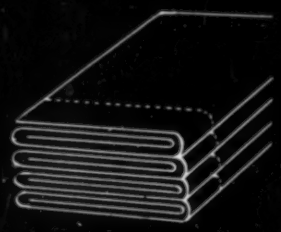

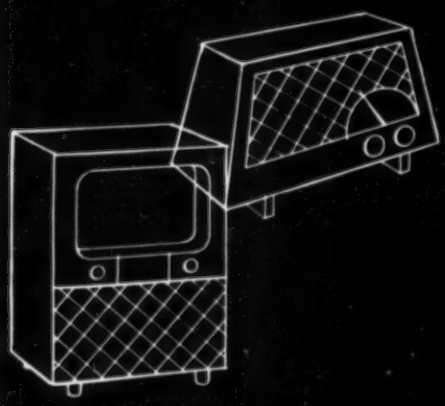

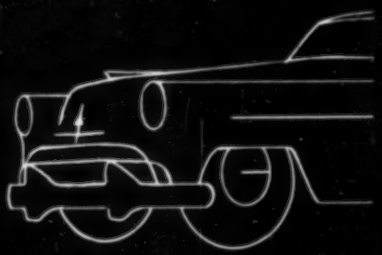

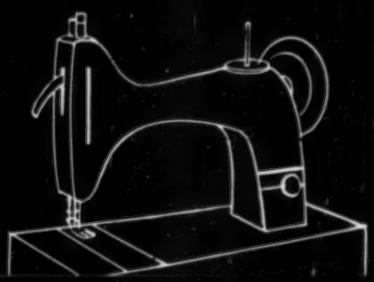

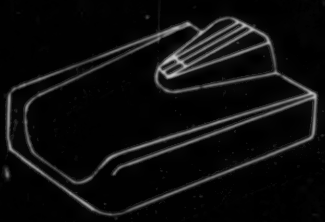

Consumers' Research Bulletin

OFF THE EDITOR'S CHEST

FALL CLOTHING and various household textiles will need to be purchased very shortly. As the home purchasing agent makes up her shopping list, she undoubtedly comes to certain conclusions, favorable and otherwise, about washability, fading resistance, ease of ironing, resistance to perspiration stains, and other serviceability factors of the items she has last purchased. Whether or not she has been successful in her choice of fabrics and textiles will affect her attitude of mind in approaching her fall buying as well as her decision on what and how much to buy.

At a conference of textile experts this past spring, considerable dissatisfaction was voiced over the fact that the textile trade was not getting as large a share of the consumer's dollar as was needed to assure thriving conditions in the industry. There was much searching of minds and exchanging of views on the causes of this reluctance to buy. Consumer discontent with performance was felt to be a major factor in the lack of demand for textile products. Too much emphasis on style, fashion, and design with too little concern for performance of the merchandise, were held to be responsible to some extent. In order to re-establish consumer confidence, there is need for wide-spread acceptance of approved standards of performance, according to one speaker, which will enable the purchaser to evaluate a dress, a curtain, a blouse, a shirt, a slip cover, that she contemplates purchasing, from information on the label regarding its performance in use including shrinkage, color fading, washability, and other essential factors. It was noted that at the present time there is considerable "discretionary spending power" which means that consumers can spend their money, or they can save it, as they choose. If they do not like what is offered or have been disappointed in past purchases, they will not buy beyond current needs.

Some attempt to meet consumer desire for good performance of textiles is seen in the use of techniques for minimizing shrinkage. In the field of cotton, *Sanforized* is generally accepted as indicating that a garment will shrink very little. Actually, according to specifications, shrinkage on a garment labeled *Sanforized* should be less than one percent. There is a companion process for synthetics called *Sanforset*. *Avcoset* is another that is endeavoring to acquire standing and prestige as indicating a maximum amount of shrinkage

(*Continued on page 25*)

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Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

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★★★For a convenient cumulative index of the 1954 CR BULLETINS preceding this issue, see page 30.

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The Consumers' Observation Post

VACATION TRIPS BY AUTOMOBILE may cost more money this year. Bridge tolls and express highway tolls are two items of expense to be included in the travel budget, since toll road construction is increasing. Keep in mind also the American Automobile Association's warning that on some toll roads gasoline costs 2 cents to 3.5 cents more per gallon than that offered for sale on parallel free roads.

* * *

DISHWASHING TIME CAN BE CUT IN HALF by the use of a mechanical dishwasher. In a study, made by Dr. Elaine K. Weaver and Clarice E. Bloom, measuring the time of dishwashing from dirty dishes on the table to clean plates in the cupboard, it was estimated a dishwasher cut the time required by an average of some 51 percent compared with hand washing. The housewives chosen to help in the study spent 4 to 6 weeks learning how to use the particular dishwasher assigned them. Other conclusions drawn from the study were that machine dishwashing was more sanitary, broke fewer dishes, used less detergent and fewer dish towels, but it did require more water.

* * *

ONE OF THE CITY HEALTH PROBLEMS is contaminated air. In two cities where studies are being made, paper filters coated with samples of air pollutants show that at rush hours the lead content from automobile exhausts is near the limit of human tolerance. No wonder there is a marked trend toward decentralization, and life in the country.

* * *

THE DO-IT-YOURSELF TREND has extended to many fields of activity far beyond the mere hobby field. The Cochran Hardware Company in Renton, Washington, according to Hardware Age, has found it highly profitable to carry an extensive line of merchandise planned specifically for the man who does his own household repairing and installation work. In the plumbing field, for example, the store sells about 120 complete bathroom sets a year, most of which are installed by the home owner. Since few owners have good plumbing tools or want to buy them for just one job, the store keeps a full assortment for rent; to customers who buy their materials at the store, the tools are loaned for five days without charge. No doubt there are other enterprising merchants throughout the country who are seizing an opportunity to serve consumers' needs in home repairs and remodeling.

* * *

CHICKEN FLAVOR IS FOUND IN THE MEAT, not in the fat or bone. That is the result of a study made at a U. S. Department of Agriculture laboratory in Albany, California. Chicken aroma, however, was found to be greater in broth made with some fat than that made with the non-fat parts. The study parallels one made earlier on beef which indicated that bones, fat, and juices were relatively unimportant in producing beef flavor.

* * *

NEW DENTIFRICES SOLD BY CATCHY SLOGANS, ingenious packaging, and large advertising expenditures are making obsolete last year's advertising claims. The upcoming favorite is Procter and Gamble's Gleem containing an anti-enzyme. Next on the admen's schedule, when this appeal is worn out, will be antibiotics, predicts the advertising magazine Tide, and then fluorides to coat tooth surfaces may be given a play. In a recent discussion of whether there really is a therapeutic dentifrice, the Journal of the American Medical Association pointed out that ideally such a product should control caries, periodontal disease, dental calculus (tartar) formation, and halitosis of dental origin. It is well established, however, that oral hygiene habits, the type of brush used, the technique of brush-

ing, and the time and duration of brushing are also important in preventing dental decay. After considering various dentifrices such as those containing substances purporting to be bactericidal, bacteriostatic, enzyme-inhibiting, or acid-neutralizing, the J.A.M.A. concurred in the position of the American Dental Association, which does not recognize any present commercial dentifrice as "therapeutic," or effective in treating troubles of the mouth and teeth.

* * *

PLASTIC-COATED FABRICS THAT IMITATE LEATHER are often used for trimming on garments. They present a special problem in dry cleaning. Some plastic-coated fabrics, according to the National Institute of Drycleaning, become stiff in the dry-cleaning process and some imitation-leather trimmed garments are so constructed that they can be neither dry cleaned nor wet cleaned. Imitation-leather jackets also cause difficulty for they stiffen in dry cleaning and there is no practical way to resoften them. Don't be surprised therefore if your dry cleaner refuses to accept such garments for cleaning or offers to handle them only at your own risk.

* * *

BACKACHE AND HEADACHE may be caused from sleeping on the wrong kind of bedspring and mattress. CR expects to discuss the proper selection of both in a forthcoming study of mattresses now in progress. In one section of the country, according to a report in Retailing Daily, there has been an attempt to deal with the backache problem by raising the foot of the bed by two to ten inches. Physicians, however, have attributed an increase in the number of their patients suffering from headaches to this practice and warn against it. One physician, indeed, is reported to have suggested that bedding manufacturers should wage a vigorous educational campaign against raising the bed or mattress in this way.

* * *

DRAPERY FABRICS sometimes deteriorate in just one portion of the printed design or pattern whether the fabric be rayon or cotton or a combination of fibers. In a number of such cases examined by the National Institute of Dry Cleaning, it was discovered that localized areas printed with a yellow dyestuff or a color with yellow in it, such as chartreuse, would deteriorate, in just one season's exposure to indirect rays of the sun. The N.I.D.C.'s investigations indicated that the yellow dyes accelerated the formation of hydrogen peroxide from the oxygen in the air and the moisture in the fabric, and that reaction caused the yellow sections of the fabric to deteriorate more quickly than the rest of the draperies.

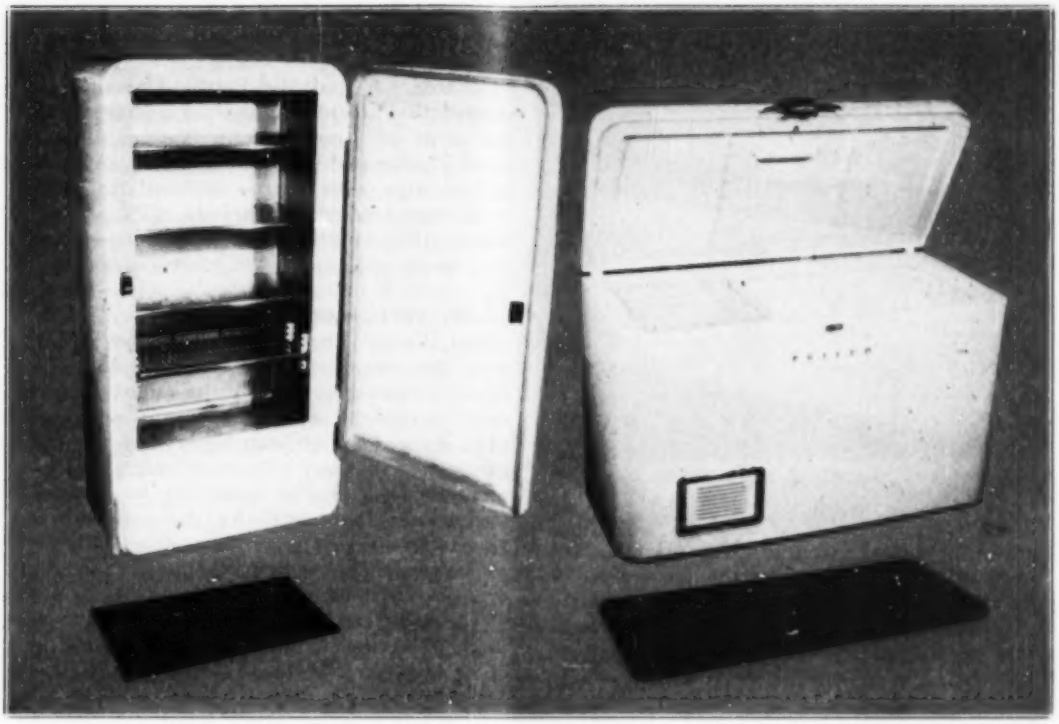
* * *

COLOR TELEVISION seems to be pretty much a conversation piece so far as consumers are concerned, although some progress is expected this fall. According to one trade report, Motorola is planning to market a 19-in. color TV set, retailing for something over $1000. One of the chief stumbling blocks to consumer acceptance of color sets has been not price but the lack of programs. CBS has announced color programs for fal that total some three hours weekly to 40 stations; NBC has planned programs in color that will add up to something like 10 hours a week.

* * *

WHAT EFFECT DO HORMONE CREAMS have on the facial skin? The practical answer to this question from the standpoint of the women who spend a considerable sum for hormone creams is important. Some researchers have held that when they were used on the skin of women of a certain age the texture of the skin was improved. In a recent issue of the Journal of the American Medical Association, however, Dr. Howard T. Behrman of New York reported the results of an experiment which he made to determine whether there were any noticeable changes in the skin of the face through continuous use of commonly available hormone creams. His findings do not agree with other studies in the field. One side of the face of those participating in the experiment was treated with hormone creams, the other side treated with a cream which was similar in composition but lacked hormones. It was Dr.

(The continuation of this section is on page 33)



Amana 12E *Philco H-1335*

Home Food Freezers

SINCE home preservation of food by freezing is the simplest, best, and probably safest method of home preservation, it is not surprising that home food freezers have been and continue to be popular. Over 6,000,000 freezers were sold in the pre-war years, and in 1953 alone approximately 1,200,000 freezers were sold—at an average retail price of $400.

There are several points that should be considered in buying a freezer.

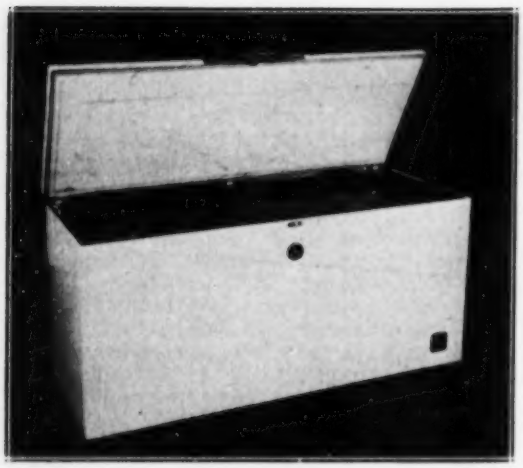
1. What size is best suited to the requirements of the particular home?

2. What type should be purchased, chest or upright?

3. How much freezing space does the unit provide for initial freezing of foods?

These points will be discussed later in the article.

When freezers first became popular, it was believed that, in order to preserve flavor and food value, foods must be frozen fast, at very low temperatures (20° to 40° below zero). In recent years, however, it has been found that foods can be frozen satisfactorily at 0°. All of the freezers tested by CR except one (*Philco*) maintained an average temperature of 0° at a room temperature of 90°, and all but two (*Philco* and *Deepfreeze*) at a room temperature of 110°. The cost of providing the low temperature varied widely, depending on the make of freezer. The difference between the most economical freezer and the most expensive to operate could amount to as much as $1.20 a month or about $15 per year. Operating cost unfortunately cannot be determined by the consumer with any certainty (unless he is in a position to be guided by information such as is supplied in this article) until after he has purchased the freezer and put it into use. If the appliance turns out to use more than a normal amount of electricity, there is nothing that can be done about it except possibly to put the freezer in a cooler place. Operating costs will be much higher in the summer than in the winter; this is due not only to the higher room temperatures in the summer but to the fact that the owner is likely to quick freeze large quantities of food



Frigidaire HR-132

during the summer months. The Arkansas Experiment Station found that the average use of electricity by home freezers in the month of July was approximately 100 kilowatt-hours compared to 50 kwhr. for December. The Indiana Experiment Station found that, although large freezers use more electricity than small freezers, the cost of operation per cubic foot of storage is, as would be expected, lower in the larger freezers.

Size of freezer

The most popular sizes of freezers, according to retail sales in 1953, were, in the chest type, from 12 to 17 cu. ft.; and in the upright type, the 11 and 12 cu. ft. This does not mean that these are necessarily the most suitable sizes for a given family, for in many cases a compromise has to be made, depending upon the amount of space available where the freezer can be located. Actually, 5 to 6 cu. ft. per person is considered to be a satisfactory size for most families, and this can be reduced to 3 cu. ft. per person if additional space is rented at a frozen-food locker. Freezer space in a public locker is more economical, though less convenient, than freezer space at home. Whatever size or type you decide upon, be sure the doorway openings and width of stairs (if to go in basement) are large enough to permit bringing the freezer in. Don't buy a freezer unless you are permanently (or reasonably so) located in your present home, for having to move a loaded freezer to another home or another city or town can easily wipe out any savings from its use.

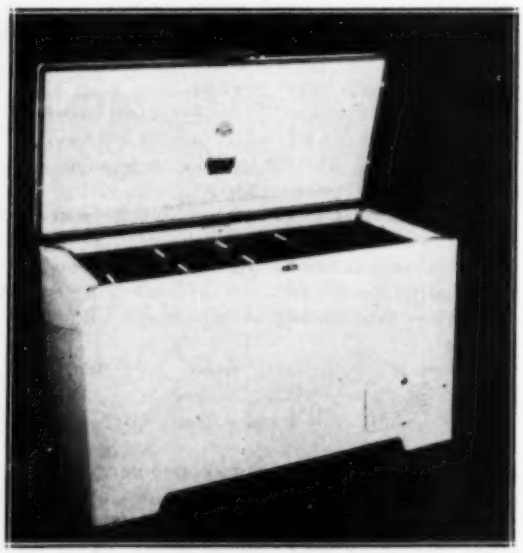
Location

If operating costs are to be kept to a minimum, the freezer should be installed in a cool location, such as unheated garage, basement, or enclosed porch which should be dry and well ventilated. A study by Purdue University indicated that freezers located in a heated space use about 15% more electricity than those located in unheated parts of the house. A survey by one large manufacturer disclosed that about 31% were located in kitchens, 27% in basements, 16% in utility rooms, 9% in porches, 10% in garages, and 7% in other locations.

Chest versus upright freezers

In CR's test, the cost per cubic foot of operating the most economical upright and chest freezers was approximately the same, when the doors were kept shut; however, it is reported that, if the doors on both types are opened five times per day, there will be an increase in operating cost per year of about 8% for the chest freezer and about 16% for the upright. For those who open a freezer only occasionally, and we believe they will be in the majority, the increase would be a good deal less.

The most convenient place, of course, is the kitchen, but as few kitchens have sufficient floor space to accommodate a 12 cu. ft., 15 cu. ft., or larger chest-type freezer, those to whom convenience is most important select upright freezers. Uprights are somewhat more convenient to load and unload than the chest type and are easier to clean and defrost (but must be defrosted more frequently). The concentrated

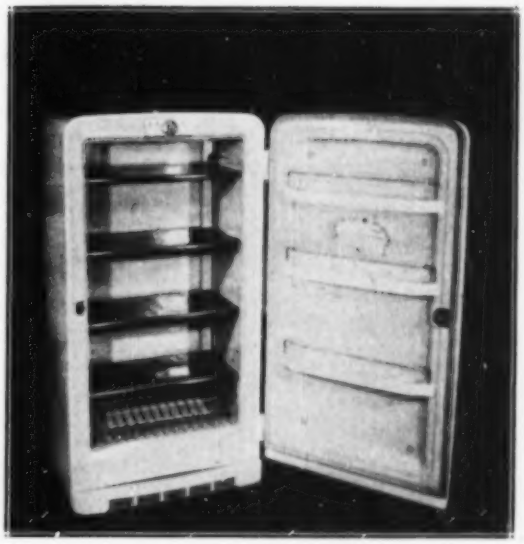


Hotpoint EK152-7

load of a big upright freezer on the floor is quite heavy, and the floor may in some cases require extra bracing to support it safely.

"Frozen food plans"

These are essentially schemes to sell a freezer and a "food package" of $200 or so on a time payment basis. The average price of a complete deal usually ranges from $500 to $800, but it may often exceed $1000. *It is not in general a sound policy to buy a freezer which is offered with a year's supply or a certain amount of frozen food.* The wise consumer will prefer to buy his freezer alone so that he can obtain one of known quality and economy and then buy the food he cares for at his own time and in the amounts he chooses without the restraints or disadvantages of any "package deal." In some cases the housewife has paid $75 to $125 more for the freezer than if it had been bought in an appliance store. In many cases, the combination selling arrangement has been highly deceptive and dishonest (and one large Better Business Bureau has charged that hundreds of residents of its city have been victimized by this multi-million dollar high-pressure selling scheme). Gross misrepresentations (as to savings, food quality, etc.) have been made by a great number of high-pressure salesmen; "price padding" is a common practice, so that the customer is obligated to pay far more than he meant to. Many of the salesmen have used misleading arguments based on the opinions of persons said to be experts on nutrition to suggest that the new procedure of "living out of the freezer" will make for better health. Claims that use of frozen foods will tend to lengthen life and bring about reductions in the family's doctor and dentist bills are wholly unwarranted and unscientific. There is no justification at all for favoring frozen foods over fresh foods, and it is fairly certain that it is safest for any family to use fresh foods to the greatest possible extent.



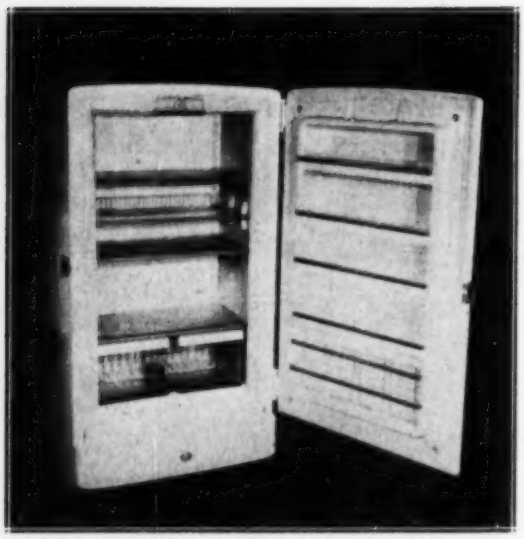
Deepfreeze CU-126

Anyone planning to become a patron of a food-freezer plan should protect himself and his family from dissatisfaction and financial loss by careful checking before any contract is signed.

Coldspot

Freezing space

Food will be frozen more quickly if the food containers are placed in contact with the refrigerated surfaces. In the chest-type freezers, a separate compartment is usually provided; in upright freezers, the containers must be placed in close contact with the refrigerated shelves. To express this freezing space in terms of volume has little meaning, for the volume is not all usable as space for quick-freezing. For purposes of comparison, the surface available for freezing food, as designated by the manufacturer, is given as an area in square feet. It is referred to as the quick-freezing surface. (Food that is in contact only with other packages of frozen food will take a longer time for freezing.) The *Frigidaire* chest freezer had somewhat less quick-freezing surface than the other chest



General Electric HV-11L

freezers. (This might involve no particular disadvantage for some users.) Uprights, in general, have somewhat more quick-freezing surface area than the chest type.

Warning devices

Some freezers are equipped with some sort of a warning device to inform the user when the temperature in the freezer is above that which is considered safe for the proper storage of food. When a signal light is used, it will be on when the freezer is operating normally; when off (not lighted), it means either that the temperatures within the freezer are too high, or the lamp bulb has burned out, or the power has been cut off either at the source or by the blowing of a fuse, or by accidental removal of the plug. Some manufacturers eliminate accidental removal of the plug by providing a special clip which secures the plug to the outlet. An audible-signal device is used by Philco, which operates independently of the power supply by use of a small 6-volt dry battery (A-battery type). This would seem to be the preferred method if the battery is checked frequently (a switch is provided for this purpose by which the bell can be operated manually) and the battery replaced promptly as needed.

CR's tests

The technical tests conducted by CR on the freezers comprised the following.

1. "Pull-down" test at a room temperature of 110°.
2. No-load test at a room temperature of 90°.
3. Load tests at a room temperature of 90°.
4. Electrical insulation tests.

All the freezers were "run in" in an ordinary room for several days before being connected to the test apparatus.

Pull-down tests were made after the freezers had been standing with the lids open in a room held at a temperature of 110° until all parts were at that temperature. The lids were then closed, and the thermostats short-circuited to produce continuous operation of the motor and compressor. The time and energy required to lower the temperatures in the food compartments to 0° in the respective freezers were then determined. This is a very important test of the *adequacy* of a freezer's mechanical unit; the length of time required gave a measure of the *refrigerating capacities* of the units. Results are shown in very condensed form in Table I.

The no-load test in the 90° room temperature was run with the storage and freezing compartments empty; the test was made at a control setting which gave an average temperature close to 0°. (The *Philco* had only two settings, marked "Storage" and "Freeze.") Values of energy consumption and running time were determined. The cost-of-operation figures obtained under the conditions of this test approximate those that would be obtained in actual use under ordinary conditions in rooms whose temperature would range from 70° to 90°, with food being intro-

Kelvinator FR-12V

Table I—Pull-Down Test to 0° in Room at 110° Temperature

Make of freezer	Rated capacity, cu. ft.	Measured capacity, cu. ft.	Quick freezing surface, sq. ft.	Pull-down test		
				Kwhr. to reach 0°	Time to reach 0°, hr.	Hr. per cu. ft. to reach 0°
CHEST						
Hotpoint EK152-7	15	15.2	8.0	0.72	2.3	0.15
Coldspot	14.7	14.5	7.0	1.3	3.3	0.23
Philco H-1335	13	13.0	6.0	1.2	3.2	0.24
Frigidaire HR-132	13.2	13.8	4.5	1.3	4.2	0.30
UPRIGHT						
Amana 12E	12	11.8	9.1	0.67	1.7	0.14
Kelvinator FR-12V	12	11.8	9.3	0.68	2.1	0.18
G.E. HU-11L	11	11.7	8.4	0.61	2.4	0.21
Deepfreeze CU-126	12	11.9	8.5	*	*	*

*Failed. Compressor overloaded after approximately 0.7 hr. and would be off for about 20 min., on for 30 min. Lowest average temperature reached after approximately 22 hr. was 14.3°.

Table II—No-Load Test at 90° Room Temperature with Average Temperature Inside Box of Approximately 0°

Make of freezer	Usable cu. ft.	Average temperature inside freezer, degrees	Running time, %	Kwhr. per day	Kwhr. per month	Operating cost per month at 2c per kwhr., $	Operating cost per month per cu. ft., cents
CHEST							
Hotpoint EK152-7	15.2	0.4	48.6	3.01	90.3	1.80	11.8
Frigidaire HR-132	13.8	0.2	51.9	2.83	84.9	1.70	12.3
Philco H-1335	13.0	3.5	50.0	3.77	113.1	2.25	17.3
Coldspot	14.5	−1.0	60.6	4.36	130.8	2.60	17.9
UPRIGHT							
G.E. HU-11L	11.7	0.1	48.0	2.37	71.1	1.40	12.0
Kelvinator FR-12V	11.8	−0.5	49.8	3.49	104.7	2.10	17.8
Deepfreeze CU-126	11.9	0.4	58.5	3.91	117.1	2.35	19.7
Amana 12E	11.8	−0.6	49.7	4.32	129.6	2.60	22.0

duced at infrequent intervals. Results of the no-load test at 90° appear in Table II.

Electrical insulation tests consisted of a proof-voltage test and measurement of the current leakage between the electrical circuits and the frame of the freezer, as received, after 24 hours at a temperature of 85° and a relative humidity of 85%, and also after operating continuously for one hour. It is to the credit of the better manufacturers of electric equipment that all of the freezers tested satisfactorily passed the proof-voltage and electrical insulation tests.

All had a one-year warranty on the sealed unit and cabinet, with an additional four-year warranty on the unit.

Ratings are cr54.

Chest-type freezers

A. Recommended

Frigidaire, Model HR-132 (Frigidaire Div. of General Motors Corp., Dayton 1, Ohio) $382. ($27.70 per cu. ft.)

Dimensions: Height closed, 36¼ in. (with lid open, 58 in.); length, 70⅜ in.; width, 31⅞ in. Depth inside storage compartment, distance from top edge to bottom of storage chamber which determines "reach" required to pick up package at bottom,[1] 26¼ in.; freezer compartment, 14 in. Total rated capacity, 13.2 cu. ft. (actual, 13.8 cu. ft.). 4.5 sq. ft. of surface available for quick freezing.

Description: Lower part of storage compartment divided into three sections by two fixed-position wire partitions. Two wire baskets which slide along rails in the upper part of storage compartment. Quick-freeze compartment located at the right above machine compartment, which contains the compressor and a small cooling fan. The condenser is located beneath the storage compartment of the freezer. Light in lid, inside. Neon light warning signal behind a removable glass lens at lower right-hand corner of front of freezer. Removing this lens provides access to cold control which is marked 1, 2, 3, 4. One-piece lid with key-operated lock supported by three spring-counterbalanced hinges. Exterior finish, white lacquer. Interior, steel with aluminum finish.

Performance in test: In no-load test at 90°, ranked third (favorable) in energy consumption per cu. ft. per month. In storage load test, energy per lb. of food per month was lowest of all the freezers in the group tested. Ranked seventh in pull-down test; average temperature in empty box obtained in 3 hr. was 23.1°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $1.70 per month (12.3c per cu. ft.).

Hotpoint, Model EK152-7 (Hotpoint Co.; Div. of General Electric Co., Chicago 44) $480. ($31.60 per cu. ft.)

Dimensions: Height closed, 37½ in. (with lid open, 63¼ in.); length, 60 in.; width, 33 in. Depth inside

[1] This distance for a short person should not exceed about 26 in. For a person with long arms, 30 in. is practicable.

Table III—Storage Load Test at Room Temperature of 90°

Make of freezer	*Usable (measured) cu. ft.*	*Storage load, lb.*	*Freezer compartment load, lb.*	*Total load, lb.*	*Average temperature, degrees*	*Running time, %*	*Kwhr. per month*	*Kwhr. per cu. ft. per month*	*Approx. cost of operation per month per lb. of load,* cents*
CHEST									
Frigidaire HR-132	13.8	401	50	451	−1.0	55.8	90.3	6.5	0.40
Hotpoint EK152-7	15.2	370	103	473	1.0	56.5	100.2	6.6	0.42
Philco H-1335**	13.0	307	112	419	9.0	45.6	105.6	8.1	0.50
Coldspot	14.5	307	112	419	−0.5	61.6	132.6	9.1	0.63
UPRIGHT									
G.E. HU-11L	11.7	—†	—†	311	−2.5	47.0	66.0	5.6	0.42
Deepfreeze CU-126	11.9	—	—	333	0.5	51.2	96.0	8.1	0.58
Kelvinator FR-12V	11.8	—	—	316	0.5	45.1	97.5	8.3	0.62
Amana 12E	11.8	—	—	310	−0.5	43.8	114.3	9.7	0.74

*at 2c per kwhr.
**The figures in the last four columns would have been significantly higher if the freezer had attained the desirable 0° temperature in this test.
†No separate freezing and storage compartments in this type of freezer.

storage compartment, 29¼ in.; freezer compartment, 15½ in. Total rated capacity, 15 cu. ft. (actual, 15.2 cu. ft.). Area of surface for quick freezing, 8.0 sq. ft.

Description: Lower part of storage compartment divided into three sections by two wire partitions; upper part had three wire baskets supported by two rails. Quick freeze compartment located at the right above the machine compartment, which contains the compressor. The condenser is loca ed inside the outer freezer wall. Light in lid, inside. Warning light in small door of machine compartment; behind this door is the control marked 1, 2, 3, 4, 5, 6, 7. One-piece lid supported by two spring-counterbalanced hinges. Thermometer included, marked −10, Normal, and +10, which clips onto edge of basket. Exterior finish, white lacquer. Interior, anodized aluminum with pebbled finish.

Performance in test: In no-load test at 90°, ranked first (lowest) in energy consumption per cu. ft. per month. In storage load test, energy consumption per lb. of food per month, below average (desirable). Ranked second in pull-down test; average temperature obtained in 3 hr. was −5.0°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $1.80 per month (11.8c per cu. ft.).

* * *

The following freezer, while generally satisfactory, was not considered as desirable as *Frigidaire* and *Hotpoint*, because of its much higher costs of operation per month per cu. ft.

Coldspot (Sears-Roebuck's Cat. No. 47—41114) $354, plus freight. ($24.40 per cu. ft.)

Dimensions: Height closed, 37 in. (with lid open, 62 in.); length, 55¼ in.; width, 33¼ in. Depth inside storage compartment, 28¼ in.; freezer compartment, 15¾ in. Total rated capacity, 14.7 cu. ft. (actual, 14.5 cu. ft.). Area of surface for quick freezing, 7.0 sq. ft.

Description: Lower part of storage compartment divided into three sections by two adjustable wire partitions. Two wire baskets which slide across the freezer. A smaller wire basket and a wire juice-rack are also furnished. Quick freeze compartment located at the right above machine compartment which contains the compressor and a small cooling fan. The condenser is located against the inside surface of the outer wall of the freezer. Light inside lid. A small on-off toggle switch located near this light controls a heater wire in the lid to minimize sweating under high-humidity conditions. Had no warning signal or light, but a warning buzzer signal with a red flag is available at extra cost. Temperature indicator, marked +15 colored red, 0 white, and −20 blue, located on lower right-hand corner of freezer to give a visible indication of the approximate freezer temperature. The cold control, marked 1, 2, 3, 4, 5, 6, and 7 is conveniently located below this indicator. One-piece lid with key-operated lock supported by two spring-counterbalanced hinges. Exterior finish, white lacquer. Interior, mottled green porcelain enamel.

Performance in test: In no-load test at 90°, ranked sixth in energy consumption per cu. ft. per month. In storage load test, energy consumption per lb. of food per month, higher than average. Ranked fifth in pull-down test; average temperature obtained in 3 hr. was 4°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $2.60 per month (17.9c per cu. ft.).

B. Intermediate (Tentative)

The *B-Intermediate* rating of the *Philco* freezer is tentative, pending further tests. As noted, the temperatures obtained in this freezer under storage load conditions at 90° room temperature were too high (9°), and its two-position control did not permit the consumer to obtain temperatures in the region of 0°. The thermostat was pre-set at the factory, and it can be presumed incorrectly. The *Philco's* performance in the pull-down test indicates that with a properly adjusted thermostat it would have no difficulty in maintaining a satisfactorily low temperature—at somewhat higher operating cost. This freezer, as received by CR, would have been satisfactory at the moderate summer temperatures prevailing in certain parts of the country, but those desirous of purchasing this make, particularly if living where summer temperatures are high, should have a clear understanding with the dealer that the thermostat will be changed at no charge if temperatures in the box are not found to be satisfactorily low (0° or a little lower).

Philco, Model H-1335 (Philco Corp., Philadelphia 34) $380. ($29.25 per cu. ft.)

Dimensions: Height closed, 37½ in. (with lid open, 58⅝ in.); length, 56⅞ in.; width, 29⅜ in. Interior depth of storage compartment, 28 in.; freezer compartment, 17.0 in. Total rated capacity, 13.0 cu. ft. (actual, 13.0 cu. ft.). Area of surface for quick freezing, 6.0 sq. ft.

Description: Storage compartment had three wire baskets and a movable plastic tray. Quick freezing compartment located at left above machine compartment which contains the compressor; condenser is of the finned type cooled by a small electric fan. Access to control and condenser for cleaning through a small hinged door at lower left front of freezer. Control marked freeze, storage, alarm, off. There is a push button for testing the working of the alarm bell which is operated by a six-volt dry battery. In the freeze position, the compressor operated continuously. Light inside lid. One-piece lid supported by two spring-counterbalanced hinges. Exterior finish, white lacquer.

Performance in test: In no-load test at 90°, ranked fourth in energy consumption per cu. ft. per month. In storage load test with control set at "Storage," average temperature inside freezer was 9° (too high; there was no provision for setting control to a colder position); temperature near top of quick freeze compartment was too high (21.5°). Ranked sixth in pull-

down test; average temperature obtained in 3 hr. was 0.7°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $2.25 per month (17.3c per cu. ft.).

Upright freezers

A. Recommended

General Electric, Model HU-11L (General Electric Co., Bridgeport 2, Conn.) $383. ($32.75 per cu. ft.)
Dimensions: Height, 64⅜ in.; width, 34⅛ in.; depth, 29⅜ in. Total rated capacity, 11.0 cu. ft. (actual, 11.7 cu. ft.). Area of surface for quick freezing, 8.4 sq. ft.
Description: Had four compartments for storage of food. Second compartment from top was divided into two sections by a wire shelf adjustable to three positions. Bottom compartment had two sliding wire baskets. Three shelves, top of upper compartment, and bottom of lower compartment are refrigerated. Door had four shelves (one of which could be tilted for easy access) and a juice rack. Machine compartment at bottom; the condenser, cooled by radiation (no fan), is at the rear of the cabinet. Cold control located above top compartment and marked 1 to 9. No warning light or signal. Door had key-operated lock. Interior finish, anodized aluminum with pebbled finish. Exterior, white lacquer.
Performance in test: In no-load test at 90°, ranked second, i.e., next to lowest in energy consumption per cu. ft. per month. In storage load test, energy consumption per lb. of food per month was below average (desirable). Ranked fourth in pull-down test; average temperature reached in 3 hr. was −3.3°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $1.40 per month (12c per cu. ft.).

B. Intermediate

Amana, Model 12E (Amana Refrigeration Inc., Amana, Iowa) $400. ($33.90 per cu. ft.)
Dimensions: Height, 65¼ in.; width, 32⅝ in.; depth, 26¾ in. Total rated capacity, 11.7 cu. ft. (actual, 11.8 cu. ft.). Area of surface for quick freezing, 9.1 sq. ft.
Description: Had four compartments for storage of food; the bottom compartment was equipped with an adjustable wire shelf. The 3 shelves and top and bottom of cabinet are refrigerated. Three wire racks in full-length door. Machine compartment at bottom. Condenser cooled by a small electric fan. Single outside door which had built-in heater coil to minimize condensation. Cold control located in machine compartment and marked "Off, 1, 2, 3, 4, 5, 6, 7." No warning light or signal to indicate when unit was not operating satisfactorily. Exterior finish, white lacquer. Interior finish, anodized aluminum with pebbled finish.
Performance in test: In no-load test at 90°, ranked eighth (highest electricity consumption of all freezers tested—undesirable) in energy consumption per cu. ft. per month. In storage load test, energy consumption per month per lb. of food was high (85% higher than that of best freezer tested in this group). Ranked first in pull-down test; average temperature obtained in 3 hr. was −7.5°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $2.60 per month (22c per cu. ft.).

Kelvinator, Model FR-12V (Nash-Kelvinator Corp., Detroit 32) $383. ($32.45 per cu. ft.)
Dimensions: Height, 57½ in.; width, 28¼ in.; depth, 31½ in. Total rated capacity, 12 cu. ft. (actual, 11.8 cu. ft.). Area of surface for quick freezing, 9.3 sq. ft.
Description: Had 4 compartments for storage of food (3 large ones and one smaller compartment at the bottom front of the cabinet). Lowest compartment is equipped with a sliding wire basket and has a drain hole with a plug made of plastic. The three shelves and a plate at the top of the upper compartment are refrigerated. Three shelves on full-length door. Machine compartment at bottom, behind lower compartment. Condenser cooled by a small electric fan. Equipped with built-in electric heater to minimize sweating. Heater can be disconnected if desired. Cold control located above top compartment and marked "Off, Warmer 5 . . . 1, Normal, Colder 1 . . . 5." No warning light or signal, but one was available as an extra. Interior finish, porcelain enamel; exterior finish, baked enamel.
Performance in test: In no-load test at 90°, ranked fifth in energy consumption per cu. ft. per month. In storage load test, energy consumption per month per lb. of food was above average. In storage load test with an average temperature inside freezer of 0.5°, temperature near bottom of lowest compartment was much too high (15°). Ranked third in pull-down test; temperature obtained in 3 hr. was −7.5°. Probable cost of operation under normal conditions with electricity at 2c per kwhr., $2.10 per month (17.8c per cu. ft.).

C. Not Recommended

Deepfreeze, Model CU-126 (Deepfreeze Appliance Div., Motor Products Corp., North Chicago) $390. ($32.75 per cu. ft.)
Dimensions: Height, 61¼ in.; width, 31⅜ in.; depth, 30 in. Total rated capacity, 12 cu. ft. (actual, 11.9 cu. ft.). Area of surface for quick freezing, 8.5 sq. ft.
Description: Had five compartments for the storage of food. Lowest compartment equipped with a removable wire basket. The four shelves and the top of the upper compartment are refrigerated. Three shelves in full-length door. Machine compartment is located at the bottom of the freezer; the condenser cooled by convection (no fan) is at the rear of the cabinet. Equipped with an electric heater to minimize sweating. (Heater can be disconnected by a switch in the machine compartment.) Cold con-

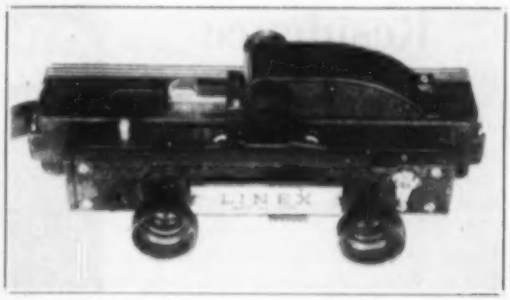
trol, located above top compartment and marked from 1 to 10. No warning light or signal. Interior finish, green enamel and steel shelves with aluminum finish. Exterior finish, white baked enamel.

Performance in test: Failed to pass pull-down test at 110°. In no-load test, ranked seventh (undesirably high) in energy consumption per cu. ft. per month. In storage load test, energy consumption per month per lb. of food, about average. In this test with an average temperature inside freezer of 0.5°, temperature near bottom of lowest compartment was much too high (25.5°). Probable cost of operation under normal conditions with electricity at 2c per kwhr., $2.35 per month (19.7c per cu. ft.).

Linex Stereo Camera

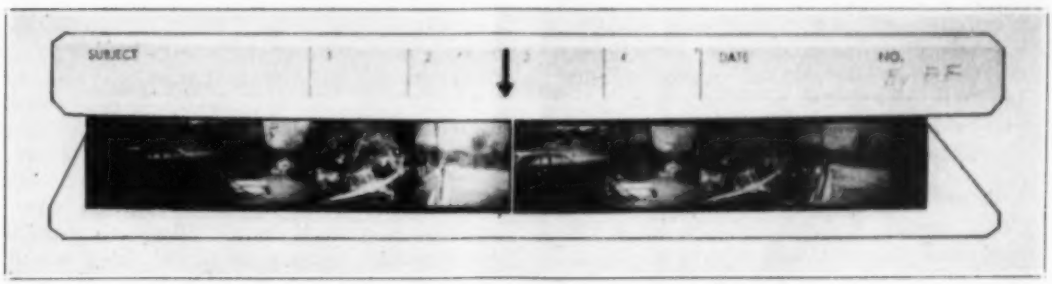
B–

Linex Stereo Camera (Linex Corp., Division of Lionel Corp., New York City) $44.50 complete with cloth carrying case, viewer, slide file, and 1 *Linex* color film. Flash gun, $5.50 extra. Color film, $1.25 per magazine, including processing; makes 8 stereo pairs.



Description: over-all size, 6½ in. wide x 3 in. long x 1¾ in. high; weight, 17 oz. Camera body is a die-casting. Essentially a simple fixed-focus stereo box camera with one shutter speed (said to be about 1/50 second) and two stops, one marked N (normal), about *f*/6, and one B (bright), about *f*/8. Shutter must be cocked before each exposure. Film is in an oblong magazine. A lever on camera opens the view-finder and also the shutters on film magazine. Film is advanced by pulling on a tab attached to the film until a click is heard; the number of the exposure is indicated on the tab. The film is returned in 4 strips by the laboratory after processing. These strips are then mounted in the 2 plastic viewing frames which are provided with each roll of film when it is purchased. Each frame holds 2 strips or 4 stereo pairs (see Figure 1).

CR's findings: The results obtained with this camera were mediocre, as was to be expected from the small-aperture fixed-focus lenses and the small size of the pictures (approximately 9/16 x 5/8 in.). The special unperforated film, which is said to be made for Lionel by Ansco, and processed at a plant in Rockville Center, Long Island, N.Y., did not give as good color rendition as regular *Kodachrome* film. The strips of transparencies were found difficult to mount in the plastic slides provided. The color transparencies obtained were compared with those sold by photo dealers for use with the *Viewmaster* viewer which takes approximately the same size picture; the *Linex* pictures were found to be less sharp. CR believes that the *Linex* stereo camera would not be satisfactory for a person with skill and experience in stereo; however, in view of the *Linex*' comparatively low price, many who merely wish to press a button and get usable stereo pictures may find it of some interest and good enough for their purpose. ¶A person who wears glasses with fairly large corrections will likely find the viewer unsatisfactory, since it has no focusing adjustment. It was reported that, at the time of CR's test, *Linex* distribution was limited to the 5 boroughs of New York City.



Linex film strips mounted in viewing slide (approximately actual size).

Basic Principles of Residence Lighting

BY MATTHEW LUCKIESH, D. Sc., D. E.

A suitable floor or stand lamp designed to provide good lighting and seeing conditions has various applications in living rooms, libraries, bedrooms, and recreation rooms. It should provide adequate direct light on the book, and some general illumination. This is a basic principle of good lighting.

LIGHTING of homes involves consideration and balance of various utilitarian, recreational, and social activities. Visual tasks vary from casual seeing for conversation, when moderate subdued light is adequate, to reading fine print and sewing on dark goods which require much more light. Good seeing conditions include the entire visual environment and, therefore, are affected by the color and brightness of the floor coverings, walls and ceiling, as well as draperies and other furnishings. And superposed over all these utilitarian aspects of the problem are esthetic considerations of harmony and good taste. To achieve the objectives of adequate light and proper lighting, the requirements of the visual sense should not be ignored by overemphasis of esthetic considerations. By the selection of proper lighting equipment, and guided by certain basic principles, the home owner can do much with good lighting toward making a house a home.

Adequate light

The amount of light desirable for a given visual task depends not only upon the task itself but also upon one's seeing ability and the limitation of the visual sense. Visual acuity, or the ability to see fine details, increases with the level of illumination. One can demonstrate this by trying to read very fine print in a dim light. Many fine details that are not ordinarily visible are readily seen under the much higher levels of light near a window in the daytime. Sewing with black thread upon dark cloth involves details of very low visibility. When such a task is viewed in full sunlight, fine detail can be readily distinguished. Such demonstrations illustrate the fact that the ability of the eyes is not fixed but depends upon the level of illumination.

Many researches in seeing have established the relationships of light and vision which are the essential tools for seeing. The latter is a human activity involving not only the visual sense but the entire human being. Therefore, adequate light and proper lighting can only be determined by the appraisal of many effects of seeing, such as eyestrain, tenseness, fatigue, etc. Furthermore, what is barely adequate for a person with normal vision is generally inadequate for a person with subnormal vision. Obviously in such a complexity there is room for disagreement as to the ideal level of illumination for such relatively difficult tasks of seeing as reading

fine print or sewing. About all that can be hoped for is to provide reasonably desirable amounts of light for various tasks in the home, within the limitations determined by the lighting equipment that is reasonably available or suitable for the home.

The level of illumination upon a task, such as this printed page, is measured in footcandles. If this page is held vertically one foot from the flame of an ordinary candle the illumination of the page is approximately one footcandle. If the page is moved to a distance of two feet, the illumination is reduced to one fourth of a footcandle. This demonstrates the inverse-square law which is common throughout physics. If the intensity of a light-source is 100 candlepower in a given direction, it can provide a maximum of 100 footcandles on a surface one foot distant. At a distance of 10 feet, this illumination dwindles to one footcandle. (This result is obtained by dividing the candlepower by the *square* of the distance in feet.) This law is very important in considering levels of illumination. Any recommended footcandles in this discussion are conservative for they take into account cost and practicality of obtaining them with pleasing lighting equipment.

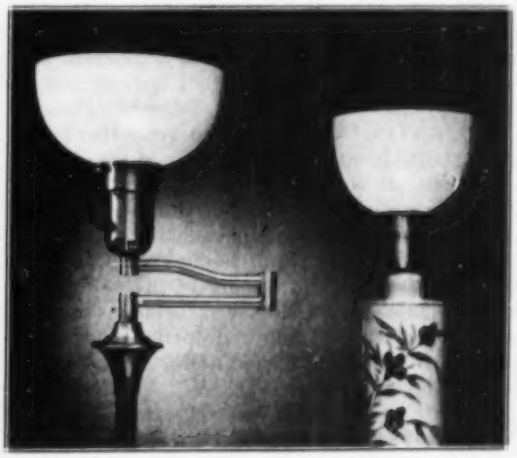
Cost of artificial light

This has greatly decreased during the past several decades, which partially accounts for the increasing footcandle-levels in actual use in schools, offices, factories, and homes. The decreased cost is due largely to increased efficiency of light-sources and to decreasing cost of electricity. It is well to understand these two factors.

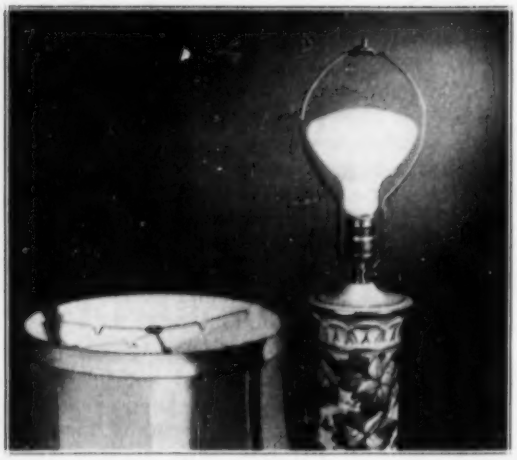
The unit of electrical energy used by an electric light-source is the kilowatt-hour. A kilowatt is 1000 watts. Therefore, a 1000-watt lamp or appliance operating for one hour uses a kilowatt-hour of energy. A 100-watt lamp operating for a total of 10 hours uses a kilowatt-hour. At 3 cents a kilowatt-hour, a 100-watt lamp can be operated 10 hours for 3 cents or 3-1/3 hours for 1 cent. The cost of electricity is less than 3 cents per kilowatt-hour in many electrified homes.

The *efficiency* of light-sources is now measured in lumens per watt and not in candlepower. Tungsten filament lamps vary in luminous efficiency, which generally increases with the higher wattages. For tungsten lamps used in the home, the light output varies from 10 to 17 lumens per watt. Inasmuch as 12.6 lumens is approximately equal to one candlepower, it is seen that the candlepower of filament lamps generally exceeds the watts. For example, a 100-watt tungsten filament lamp is more than 100 candlepower. At a distance of two feet from it, the maximum illumination on a surface is 25 footcandles. By using a proper reflector to back up the lamp, this level of illumination can be easily doubled. Therefore, it is seen that it is easy to obtain 50 footcandles or more for difficult visual tasks.

Fluorescent lamps supply 30 to 50 lumens per watt. They are thus 2 to 3 times as efficient as tungsten filament lamps in the home. But



The inner diffusing shades in the above photographs provide both diffused direct light and general illumination. A shade is used to cover the inner reflecting and diffusing equipment shown in the pictures.



In this case, the bulb of the filament lamp takes the place of the glass shade shown in the illustrations on page 15.

this illustrates the fact that efficiency is not the sole consideration in home lighting. Although the color of fluorescent light has been steadily improved, there is a satisfying warmth in filament light. Furthermore, the larger physical size of fluorescent lamps requires larger and sometimes costlier fixtures, which limit their use in residential lighting. Nevertheless, there are excellent uses for fluorescent lamps in "utility rooms" and for certain decorative effects as discussed in detail in an article which is to follow in a later BULLETIN. The compactness of filament lamps makes it possible to use them in unobtrusive fixtures and in portable lamps which can supply good lighting while filling a place as home furnishings.

One basic difference between fluorescent and filament lamps is that the former must be operated with a "ballast," which is different for lamps of different wattages. Filament lamps need no ballasts, and lamps of different wattages can be operated in the same socket. However, fluorescent lamps operate very much cooler than filament lamps and thus have advantages where rooms may be too hot in summer, and where air conditioning is installed for artificial cooling. They can, too, be used in confined places with minimum danger of fire. For example, they can be installed behind cornices or valances to illuminate draperies and in a variety of places to provide useful and interesting lighting effects.

Good seeing conditions

These involve much more than adequate light upon the visual task such as reading and sewing. Good seeing conditions involve the entire visual environment. High brightnesses, and particularly high brightness-contrasts, in the visual field not only decrease the ability to see but cause eyestrain and fatigue. These are generally subtle effects but they have been adequately revealed by various researches in seeing. Therefore, no bare bright light-sources should be visible in the entire visual field. Portable lamps, thus, are generally satisfactory for the reason that the shade conceals the light-sources. Ceiling fixtures and wall brackets can be easily equipped with shades to shield the light-sources.

This basic principle extends beyond light-sources to the backgrounds. A shaded wall bracket on a darkly stained wood panel is decidedly more glaring than the same lamp on a light tinted wall. This white page of printed matter can be read for long periods with less strain and fatigue when its surroundings are not too dark. For example, when this page is being read near a portable lamp, it may be a hundred times brighter than its background, which may be a very dark carpet. This is a condition that makes for glare, of which the observer may not be conscious. As a consequence of the establishment of the fact that high brightness-contrasts between one's book or papers and their immediate surroundings are undesirable, dark desk tops and filing cabinets in schools and offices are being replaced by finishes which reflect more light. In fact, this basic factor, which influences seeing conditions so much, has led to a revolution in furnishings of schools, offices, and factories, even in modern homes. To improve seeing conditions, paints of higher reflectance are used on walls and equipment, and furnishings are of lighter colors. All these combined comprise the visual environment.

Proper lighting plays an over-all role in providing good seeing conditions. There should be adequate light on the visual tasks and some general lighting over the entire room. A metal shade containing a light-source which illuminates the task alone and leaves the room in darkness provides very poor seeing conditions. There must be a reasonable balance between the general and the direct or specific lighting. Portable lamps with open-top shades provide this combination generally quite satisfactorily. It can be readily achieved in all rooms and work places. There are various ways available of obtaining direct lighting and general illumination at the same time.

Fixtures versus portable lamps

Unfortunately in very few places where the householder purchases lighting equipment is there any serious discussion of lighting for easy and comfortable seeing. The consumer is too generally confronted with a forest of fixtures hanging from the ceiling or a maze of portable lamps crowded together on tables and floor. The householder seldom has an opportunity to judge the lighting effect obtainable from a single fixture or portable, for such equipment is generally sold predominantly as ornamental, rather than practical. Fixture salesmen may emphasize period styles when as a matter of fact these are generally of minor importance in homes. However, if the householder is armed with knowledge of the basic principles of lighting and seeing already dealt with and with the different requirements of various rooms and work places to be discussed later, he will avoid major mistakes in purchasing fixtures and portables.

Many suitable fixtures conceal the light-sources behind suitable glass or plastics. Wall brackets and ceiling candelabra should not be chosen if they cannot be readily equipped with small shades over each imitation candle or lamp bulb. It is well to avoid being too much influenced by the argument that a fixture is ornamental. In this era when functional design is successfully replacing much useless so-called ornament it is well to consider whether a fixture hanging from the ceiling may not in some rooms be ornament out of place. As seen in specific cases given in Part II of this article, fixtures, where essential, can be simple. In fact, fixtures may be confined almost entirely to places where they are principally needed for utilitarian purposes. Of course, they can also be of pleasing design. Some fixtures such as pairs of wall brackets may be justified on purely a decorative basis but that is a matter of taste in furnishings.

Portable lamps do not have some of the limitations of fixtures. For those who rent their home, portable lamps are a blessing. They can have good lighting in many places without having to argue with the landlord. For all householders, portable lamps can be satisfactory furnishings and, if the purchaser has looked inside the shade, each portable can serve a utilitarian need very well. Many portable lamps are now equipped with a glass reflector inverted upon the pedestal and concealed by the shade. This provides the desirable general lighting while diffusing the downward direct light. Such portables are available in various wattages and heights, and include floor and table lamps. One kind has a tungsten lamp with multiple filaments and a special switch to permit varying the amount of light at will.

In this era of refined lighting, portables of the *direct-indirect* type are generally more satisfactory than portables with two or three sockets for bare bulbs. They can do much toward supplying adequate light and proper lighting for such tasks as reading in living rooms, libraries, bedrooms, etc. In planning new homes, strategic convenience outlets can be connected to a switch located near the entrance to such rooms. In this way ceiling fixtures can be dispensed with if the householder chooses, without any sacrifice in usefulness and pleasing qualities of the lighting.

* * *

The foregoing are glimpses of the basic principles and approaches to residential lighting. Illustrations used were furnished through the courtesy of the General Electric Co. A second article will give lighting "recipes" for various rooms, tasks, and work places.

A Review of "Your Outboard Cruiser"

OUTBOARD CRUISERS seem to be a big thing these days. More and more people are spending their leisure hours on the water, fishing, or just plain cruising around seeing the sights. The dependable outboard motor of today plus the wide selection of hulls have done much to stimulate boating interest.

Those interested in outboard cruising will find that Mr. David Klein's book Your Outboard Cruiser is very informative. Mr. Klein tells of the various advantages and disadvantages of outboard cruisers and gives information on the selection of a hull and motor which should prove useful to the prospective buyer. He discusses storing a cruiser when not in use, and the care of both hull and motor, and gives suggestions for equipment, legal and otherwise, along with some pointers on safety, seamanship, and planning a cruise. (The book is published by W. W. Norton & Co., Inc., N. Y. C., at $3.50.)

Low Backache

BY M. BECKETT HOWORTH, M.D., MED.SCI.D.

LOW BACKACHE is one of the most common medical problems today. It was probably known even to prehistoric and primitive man, but currently is one of the more serious by-products of civilization. Low backache may occur as a symptom of general diseases such as influenza or grippe, local disease such as inflammation of one of the pelvic organs, or as a consequence of disease or injury to the lower part of the back itself. The spine may be affected by such diseases as arthritis of various types, infection such as tuberculosis, and various types of tumors. In the majority of cases, however, low backache is due to a mechanical abnormality of the lower spine, with a superimposed strain or injury.

Some 50 years ago, the popular term for low backache was lumbago. This was a descriptive term, comparable to headache or stomach-ache, and had no specific meaning. It included a variety of diagnoses. Several decades ago the term "sacroiliac" became popular for all types of low backache. It was assumed that the sacroiliac joint slipped and that the slipping was the cause of the backache. In some cases, there was pain down the leg, called sciatica. The assumption was that the sciatic nerve was pressed upon as a consequence of the slipping where it crossed the sacroiliac joint. These theories were never proved. It is now known that the sacroiliac is one of the strongest joints in the body and that it probably does not slip except under very unusual circumstances. It is also recognized that such a minor slipping could not cause pressure on the sciatic nerve. The sacroiliac joint is occasionally affected by arthritis or infection, and it may be damaged with severe injuries such as fractures of the pelvis. It also relaxes toward the end of pregnancy. Otherwise it is rarely a problem.

It has been known for the past 30 years that the usual source of low backache is the lumbo-sacral joint. As this joint is very close to the sacroiliac, and not easy to distinguish, the cause for the confusion is obvious. The lumbo-sacral joint is the junction between the lumbar spine and the pelvis, specifically between the last lumbar vertebra and the sacrum. The average person has five lumbar vertebra, but a small percentage of people have four or six. The number of lumbar vertebra is not of great consequence. It is the construction of the lumbo-sacral joint that is of considerable importance, as well as the strains placed upon it.

Most vertebrate animals walk on all fours, with the spine in a more or less horizontal position. The higher apes walk in a semi-erect position, but frequently resort to the position on all fours. Man alone stands and walks erect. The infant's spine at birth is flexed or bent forward, and the hips and knees are drawn up. Gradually the spine and the legs straighten out in the first year of life so that the infant, when he stands, can assume the erect position. In this process the lumbar spine develops a hollow, or lordosis, whereas the process of becoming erect produces a mechanical strain between the movable lumbar spine and the fixed pelvis. The lumbo-sacral joint bears the whole weight of the trunk as well as the strains incident to the movements and use of the trunk. Nature has been unkind to man in fairly frequently producing deformities of various types at the lumbo-sacral joint. Man has been unkind to himself in using his back carelessly or recklessly, or in not keeping it in good physical condition.

Chief Causes of Backache

Posture is very often an important factor in low backache, not only the posture of the spine, but also of the feet and legs. Good sitting posture is one of balance, with the head, shoulders, and trunk erect and centered over the pelvis. Good standing posture should also be erect and balanced, with the head, shoulders, hips, knees, and ankles in vertical alignment, without tension or strain. In this position there is little or no strain on the lower back. In the usual type of poor posture, the body makes an S curve as seen from the side, with the head and neck thrust forward, the upper back stooped, and the chest flat, the forward curve of the lower back increased, and the abdomen prominent or sagging, the pelvis well in front of the vertical line, the hips and knees hyper-extended or bent backwards. This posture is one of considerable strain on the low back, particularly for people who are long in the standing position. A person who is overweight or obese, with a large protruding abdomen, is thrown further out of balance, with increased strain on the low back. The same effect is seen in the latter part of pregnancy, but fortunately is of shorter duration.

The environment, as it relates to the back, is often of importance in producing back strain. A soft, sagging bed increases the strain on the back, whether the individual sleeps on his face, side, or back. On the face, the spine and hips are hyper-extended and stretched. On the side, the lower side is stretched, the upper side compressed, the spine curved to the side. Likewise a soft, low, deep chair may be an important factor in backache. Many living room chairs are of this type, as well as many of the seats in airplanes, buses, and automobiles. Theater seats are often too small, crowded together, and sometimes have a back which is much too curved from side to side. Such shoes as sneakers, loafers, ballet slippers, and pumps, are light and comfortable on the feet, but are not suitable for long standing and much walking, and are likely to increase the strain on the back. High heels are even worse in throwing the body off balance and increasing the tendency to poor posture as well as back strain. Knock-knees and poor foot posture also aggravate back strain.

Physical Structure of the Back

The support of the trunk is the spinal column, consisting usually of 24 vertebrae with their joints and ligaments. The ligaments of the spinal column bind the vertebrae together and support them strongly at the extremes of motion, but are not subject to voluntary control. The spine receives additional support from the muscles which act upon it.

Several groups of muscles run lengthwise along the spine and are intimately connected with it. Other muscles, such as those of the chest and abdomen, while not directly connected with the spine, nevertheless act as spinal muscles. It is the muscles which give motion to the spine and control its position. The health and strength of these muscles is of utmost importance in protecting the spine from injury as well as in effective performance of the body. Inactivity or disuse results in weak flabby muscles which are of little service. Excessive activity may result in muscle injury due to strain or fatigue. Sudden violent activity or heavy lifting, especially if done only occasionally, favors back strain. Moderate regular activity and exercise have the effect of maintaining the muscles, circulation, and joints at peak efficiency and so reduce the risk of back injury.

Symptoms

Low backache may occur at any age, but it is uncommon in children, most common in middle-age adults. It occurs in any race or either sex, but is more frequent in civilized urban communities.

The symptoms of low back trouble vary considerably in different individuals, and usually from time to time in the same person. The predominant complaint is an ache or pain in the lower back, sometimes on one side, sometimes in the middle. The pain may extend to the back of the hip or even down the back or outer side of the thigh or leg as far as the foot. Leg pain of this type is commonly due to sciatic nerve root pressure or irritation. The back pain may begin suddenly or gradually. It may be associated with an injury or illness or may begin without apparent reason. The pain may be a dull ache or sharp; it may come and go or be present all the time. Ordinarily the pain varies in intensity somewhat with lying, standing, or sitting. It is apt to be worse after long sitting, especially in a poor chair, or lying on a poor bed. As time passes, the pain may improve, get worse, or remain the same, depending upon circumstances. An attack may begin with a definite injury such as a fall, a severe twist, a strain from doing heavy lifting, or by accumulated small injuries. Unaccustomed activities, such as heavy house cleaning, moving furniture, gardening, or other outdoor work, may provoke an attack. At times there is a "slip" or "crack" or feeling of "giving way" in the lower back at the onset of the trouble.

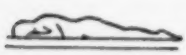
The person with low back pain may notice the spine or trunk to be out of line, often described as one "hip sticking out," or there may be difficulty in straightening up from the stooped position or in standing erect. There is often restriction of motion or stiffness in the back, and sometimes weakness, especially for stooping or lifting. In such cases there is usually interference with regular activities such as work involving the use of the back, housekeeping, or even sports.

In view of the great variety of causes of backache, some of them serious, and the various forms of treatment which might be effective in the different types, it is of much importance that a person with a backache which is severe or persistent should have a competent medical or orthopedic examination. This in many cases will include X-ray examinations. X-rays may demonstrate disease, fracture, or dislocation, mechanical deformity or weakness, and occasionally tumor. It is important that an accurate diagnosis of the cause and nature of low back pain be made, just as with pain in the stomach or heart. Low backaches differ, and not all call for the same treatment. Treatment without proper diagnosis may be a waste of time and

money, may fail to bring relief, and may even be harmful. Sometimes it is easy to arrive at the diagnosis, but often careful examination and considerable skill and experience are required.

Diagnosis and Treatment

Self diagnosis and self treatment are risky and should be avoided. There are, however, certain measures which are safe and often helpful that may be used for mild backaches of short duration.



The bed should be firm and flat. This requires a mattress with strong inner springs (not the type used in the usual commercial mattress), or a mattress of cotton felt or hair. A foam-rubber mattress is intermediate between the usual innerspring type and the felt or hair mattress. The box spring should be strong. With the usual type of box spring, it is better to put a board, such as a piece of plywood one-half to three-quarters inch thick, between the mattress and the springs. When the person lies upon it, the bed should not sag from end to end or side to side, but should remain flat.

The right kind of chair is one that is erect, firm, with arms, and adapted to the size and shape of the individual. The back of the chair should be curved to the shape of the normal trunk. The depth of the chair should be equal to the length of the thighs, and the height equal to the length of the legs below the knee.

Simple backache may be relieved by heat, supplied by a lamp, electric pad, hot towels, hot tub, or hot-water bag. The heat should be warm, not hot, and used for 20 or 30 minutes two or three times daily. For sleeping, a hot-water bag is safest. Heat which is too strong, or used too long, is apt to damage the skin. Diathermy or short wave produce heat deep in the tissues, but should be used only under medical direction and supervision.

Massage, if skillful and not too strenuous, may be helpful, but should not be given until the diagnosis is made.

Supports, such as adhesive strapping, a belt, or a corset, may be useful, although strapping tends to become loosened and is often harmful to the skin. Stronger supports should be reserved for prescription by an orthopedist.

The safest medicine for the relief of pain is aspirin, which may be taken in doses of five to ten grains and as often as three or four times a day.

Activities should be restricted to prevent further strain and injury to the back. Low-heeled oxfords are the preferable kind of shoes for standing and walking. Exercises may be helpful, but when there is pain, they should be taken only under medical prescription. Excess weight should be reduced by a reduction of starches and sweets, counterbalanced by an increase in the proteins (meat, fish, eggs) of the diet.

Manipulation is sometimes helpful for backache, although many persons have had repeated manipulations over a long period of time without any real improvement. Manipulation is most suitable for the type of back which snaps or cracks at the time of onset, but should not be given without a preliminary careful medical examination, and X-rays. Manipulation in the presence of certain diseases and injuries of the spine may be dangerous. Manipulation, when given, should not be violent or painful, and if not effective after a few treatments should be discontinued.

If a mild backache does not promptly improve or subside with the measures already indicated, it is imperative that a competent diagnosis be secured, followed by proper treatment under medical supervision. Early attention to the problem is called for since it is more difficult to treat successfully backache of long duration. Severe, persistent backache sometimes requires a spinal fusion operation for maximum and permanent relief. This is more often the case when the mechanical weakness of the lumbosacral joint is marked.

Sometimes there is a rupture of the disk between the vertebrae, with extrusion of the soft interior portion, with pressure against the nerve root, causing sciatica. Persistent or severe sciatica always calls for competent evaluation, usually by an orthopedist or neurologist or both. Sometimes sciatic pain is due to mechanical irritation without pressure, and is relieved by treatment of the back previously indicated. When there is definite pressure against the nerve root, however, there is no sure way of relieving the pressure except by a surgical operation. Complete rest in bed for two or three weeks is more likely to be successful than any other treatment for sciatica short of operation. Manipulation may be definitely harmful. Similarly, the pain may be increased rather than relieved by diathermy, massage, or exercises, as well as continued activity. At operation, the mass of tissue pressing against the nerve is removed. It is desirable in many cases at the same time to do the spinal fusion operation in order to relieve backache and give the subject a permanently strong back.

Preventive Measures

The most important aspect of low backache is prevention. Since low backache is so common, an understanding of its causes and prevention is of great value. Although the individual cannot alter the internal structure of his back, he can greatly reduce the stresses and strains which lead to pain. Preventive measures include a flat bed, proper chairs, and proper shoes. The avoidance or correction of obesity is of great importance. The avoidance or correction of poor posture is also of much value.

Proper use of the body is also essential. It is common, especially for housewives, to lift with the knees straight and the body bent forward at the waist. This puts the whole strain on the lower back, and is likely to result in backache or acute strain. It is far better to lift with the legs, starting with the legs flexed and then straightening them, with the trunk fairly erect, and the weight held in the arms close to the body. Thus the leverage on the back is much reduced. If the legs are unable to lift the weight, the back is even less able to do so. In moving heavy objects such as furniture it is common to use the body as a brace and push or pull with the arms. It is far better to flex the hips and knees and let the weight of the body fall toward or away from the object, thus using the body for assistance rather than as a brace or fixed support. The same principle is commonly used in sports and is continued in the "follow-through."

The basic principles of muscular activity should be observed. The muscles should be warmed up by graduated exercise at the beginning of each season's activity, and at the beginning of each day. Muscles which are soft and flabby from sedentary occupations or disuse during most of the year are not in condition for heavy work. Similarly, if heavy work is to be continued for several hours, it is better to take an intermission or to stop before real fatigue occurs.

In summary, low backache is not a single disease, but a symptom due to a variety of causes. Simple low backache of short duration may be relieved by a group of simple and safe measures. Persistent or severe low backache, particularly if accompanied by sciatica, requires a careful diagnostic examination by a competent physician or orthopedist and careful evaluation of treatment. Low backache can, to a large extent, be prevented by an understanding of its basic causes and the avoidance of abuse of the back.

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The author of the foregoing article is Clinical Professor of Orthopedic Surgery at New York University Post Graduate Medical School, Orthopedic Consultant at Roosevelt Hospital, New York City, and several other hospitals, and Chief of Orthopedic Department, Greenwich Hospital, Greenwich, Connecticut. The illustrations in the article are by courtesy of the Journal of the American Medical Association, August 24, 1946

Corrections and Emendations to Consumers' Research Monthly Bulletins

Men's Wrist Watches
Page 13
Nov. '53 Bulletin

A highly qualified watchmaker believes that our BULLETIN was incorrect in stating that the "better self-winding watches. . . are now on the whole a safe buy." It is his belief on ample experience that anyone who has trouble in keeping his watches in good working order should not buy an automatic or self-winding watch. Any of them are likely to give several times as much trouble as a simple watch, and their life expectancy is commonly short, due to wear in the automatic winding mechanism. One large manufacturer and his dealers, who had sold tens of thousands of his first automatic winding model, were overwhelmed by the troubles encountered with these watches, which failed completely in service in a short period with pinion breakage of one of the automatic-winding wheels. Winding wheel bearing wear is another chronic trouble.

Toilet Soaps
Page 12
Apr. '54 Bulletin

Cuticura Soap Mildly Medicated· Delete reference to coconut and/or palm-kernel oil. We are in receipt of an affidavit from Potter Drug & Chemical Corp. that the manufacturing standards for this soap call for an upper limit of not more than 10% of the total fat mixture to be coconut oil, or any other high lauric acid oil. The company further certifies that their controls are in the hands of expert personnel and are closely supervised to make certain that these standards are maintained.

Tooth Pastes
Page 25
March '54 Bulletin

Change *Antizyme* listed under "Type" following *Listerine* to anti-enzyme and add *Antizyme* to brand name after *Listerine*. *Antizyme* is a trademarked name of the Lambert Company and not a general descriptive term. In the same table transfer phrase "with Irium" from Type column to follow *Pepsodent* in Brand column.

Window Screen Materials

NOW that the insects are buzzing and biting again, many a householder is faced with the problem of getting new window screens or repairing or replacing some of his old ones. The question comes up, "What kind of screening shall I use?" The answer to this question will depend upon individual circumstances and preferences, since no one kind or mesh size of screening is superior to all others in all respects.

Kinds of metallic screening

Metallic window screen wire is made of many different materials, the most frequently used being "commercial bronze," aluminum, and galvanized steel.

"Commercial bronze," commonly called just "bronze" screening, is an alloy of 90 percent copper-10 percent zinc, a kind of brass, for it contains no tin as true bronze does. Commercial bronze screening is very good in resistance to corrosion and fairly strong, which makes for very durable screens, especially if carefully cleaned, and painted every two or three years. Bronze screening is also among the best in causing the least obstruction to summer breezes and transmission of light into the room. "Antique bronze" screening, which has been given a special dark brown finish after being woven, also gives excellent vision of things on the other side. (Good vision through a screen and passage of maximum light are not necessarily the same, for a bright screen may not only allow light to pass through the mesh, but will also *reflect* much light; this produces glare which interferes with clear vision.) Bright bronze screening usually "weathers" from its original golden color to a dull brown during its first year or so of outdoor use and thereby improves greatly from the standpoint of vision.

With the weathering of bronze screening (both bright and antique) an unsightly staining of nearby window trim and walls often appears. This staining comes from copper salts which form on bronze and copper screening and then wash off onto the walls. The stains generally cannot be removed without harm to the paint, but they can be avoided to a considerable extent by coating the screens with a good spar varnish every year. The special screen wire paint (sold by hardware stores and paint shops) is also good, if applied after the screening has been exposed to the weather for at least one full season, and paint may last a good deal longer than varnish, with a life perhaps of two or three years. New screening is given a finishing coat of lacquer or varnish at the factory which serves the dual purpose of preventing staining for the first year and stiffening the mesh.

Some staining of the painted wall of a house may also be caused by washing downward of dust and dirt from the screens, regardless of the type of screen wire used. Cleaning screens well before putting them up every spring should prevent this.

Because they do not cause staining of walls as copper and copper alloy screens do, and because they are also highly resistant to corrosion, and therefore long lasting, aluminum-alloy screens are becoming very popular. Advantages of aluminum (so-called "cladded aluminum," as now sold, e.g., *Alclad*) are its relatively low initial cost (about 13 cents per square foot compared to 18 cents for bronze), and freedom from maintenance—as painting or varnishing of the aluminum screens is unnecessary. If desired, however, aluminum screening can be painted to blend with the house. A zinc chromate paint should be used as a priming coat. With these advantages, however, come several disadvantages which are often overlooked. In seacoast atmospheres, according to some authorities, the salt air may cause more rapid corrosion of aluminum screening. Also, aluminum is not as strong as other screening materials and so to make up in part for its lack of strength, aluminum screening is woven of slightly thicker wire. This makes the mesh openings of 16 x 16 screening about 8 percent smaller, which is more efficient in keeping out tiny insects, but it also decreases the "transparency" of the screen to light and to those cool summer breezes. Perhaps an 8 percent loss is not important in most locations, where heat is not extreme, but it is well to bear in mind that allowing the fullest possible flow of air is a main function of screens, since insects can be kept out by merely closing doors and windows.

Extensive tests at the University of Florida have shown that 18 x 14 mesh—which is in wide sale by hardware stores, department stores,

and mail-order houses—and 16 x 16 mesh screening are about equally effective as a barrier to mosquitoes, but no mesh with larger openings should be considered for use on a home. Many mosquitoes, and other insects as well, can easily pass through screening as coarse as 14 x 14 mesh. Except in special circumstances, 18 x 18 screening is not a desirable choice, because of its higher cost and somewhat greater obstruction to light.

Considerably lower in initial cost, though likely to be a good deal higher in over-all cost because of more frequent need of replacement (where the climate is not a dry one), is "galvanized" or electroplated steel screening. Galvanized is the strongest of commonly used metal screening materials and in spite of its often short life may thus be the most desirable kind to use in locations near playgrounds or where there are many small boys in the neighborhood. Galvanized screening should be repainted or lacquered regularly to delay rusting; it has the disadvantage of being comparatively poor in transmitting light and air.

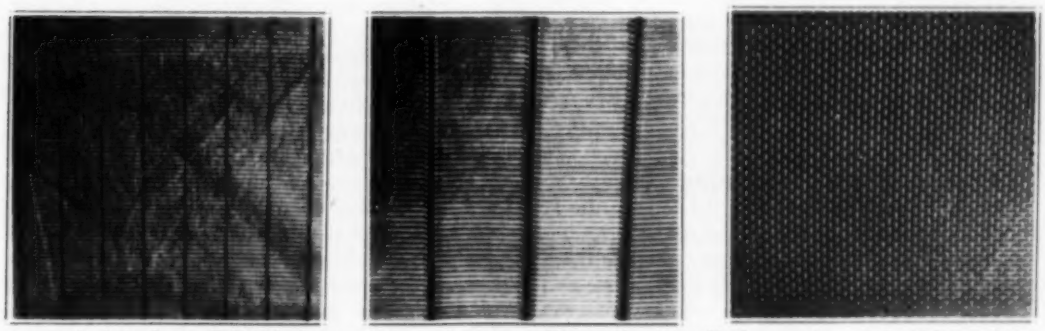
Plastic screenings

On some homes, plastic screening may be the best material to use. It is of medium price, has very good impact strength, does not corrode, and does not cause staining of near-by white surfaces. Plastic has several disadvantages, however. Certain kinds of beetles have been known to eat holes through it, and in some cases to devour the entire screen. A smoker may melt a part of the screen with the touch of a cigarette. Plastic screening is very flexible; this, though it may seem advantageous at first glance, actually makes the screen fabric much more difficult to handle in making up the screens. Plastic may in some cases reduce the free flow of air into a room more than metal screening does; it may also admit less light than equivalent metal screen wire. Metal screening is stiffer, and is easier to cut straight and will lie straight in alignment with the frame; it holds its shape well, and can be tacked onto screen frames without bulging or wrinkling and without need to be folded back or "hemmed."

Other screening materials sometimes used are made of copper, black painted steel, stainless steel, etc. Though copper is highly corrosion-resistant, it is expensive, softer than bronze, and therefore more easily damaged, and like bronze may often badly stain white walls and trim. Black painted or "black-japanned" steel, though lowest in price, is very little used because of its short life. Stainless steel, though having very good corrosion-resistance, strength, and rigidity, is little used at present, because of its very high price; however, it may eventually come into much greater use as stainless alloys go down, relatively, in price. At present it can probably be obtained only on special order.

Tacks and other fasteners for screen wire

A detail one might think unimportant is a major factor in screen life; that is the kind of tacks used to fasten the screening to the frame. As a general rule the tacks should be of the same material as the screening, for some combinations of different metals react chemically in a very active way when wet or damp, so as to cause rapid corrosion of one or both the metals or alloys. For example, if aluminum screening is put on with copper tacks, the screening will quickly corrode around the tacks and pull out of the frame. Copper or bronze screening should never be put on with iron or steel tacks or the



At the left: Ingersoll Koolshade screening; in the center: Kaiser Aluminum Shade screening; at the right: ordinary 18 x 14 mesh woven screening. Pictures are all about one-half of actual size.

tacks themselves will be quickly eaten away. Only copper or copper-base (brass, bronze) tacks should be used on copper-base screening. Aluminum tacks are not generally available but as aluminum and steel in contact do not corrode quickly, galvanized steel, stainless steel, blued steel, or just plain steel tacks may be used on aluminum (in the above order of preference). Steel tacks should also be used on galvanized or black-painted steel screening, of course. Ideally, stainless-steel tacks should be used on stainless screening, but since these are not generally available, copper tacks should be used, in preference to galvanized or blued steel. Plastic screening may be held with any kind of tacks, except that a metal or alloy that does not rust is an obvious choice, where practicable.

The same rules apply to the nails or brads used in holding the mouldings over the edges of the wire, and, of course, to the metal of metal-frame screens. Bronze screening should not be put in steel frames (other than frames rustproofed by the Bonderizing process) nor should it be installed in aluminum frames of any description, as is sometimes done. If aluminum screening is to be put in wooden frames which formerly held copper or bronze, the frames should be scrubbed well to remove all traces of the copper salts from them. Aluminum may also be corroded by rainwater dripping from copper gutters and leaders, or by water which has run over copper flashing or copper screening on windows above. The copper salts dissolve in the water and are then deposited on the aluminum which they attack electrolytically.

Types of screens

In addition to a choice of metals (or plastic), the home owner also has a wide choice of types of screens. There is standard wire screening in wooden frames or in metal frames, there are many different kinds of combination screens and storm windows, there are screens that roll into a protecting case, as the window is closed, and "Venetian blind" screens that combine a fly-screening action with louvers that keep out direct rays of the sun.

"Venetian blind" screening

CR has tried two of the "Venetian blind" sort of screens (*Ingersoll Koolshade* and *Kaiser Aluminum Shade Screening*) and found them useful in keeping out the direct rays of the sun in hot weather. Installed on windows of the same wall, facing southeast, both screens let in some direct sunlight early in the morning, but as the sun rose, more and more of its direct rays were cut off until no direct sunlight entered the room. This would reduce the amount of the sun's heat entering the room. Although both *Koolshade* and *Kaiser Aluminum Shade Screening* decrease the amount of light transmitted to the room, *Ingersoll Koolshade* gives a better view of the outside than ordinary woven wire screening on sunny days, by its effect in cutting down direct sunlight glare. *Koolshade*, which cost 94 cents per square foot in 30-inch width, is made of 17 horizontal louvers per inch, held together by vertical wires twisted around each louver every half inch. The louvers are thin bronze strips, a little less than 1/16 inch wide.

The *Kaiser Aluminum Shade Screening*, which cost 56 cents per square foot, is made of a single thin sheet of aluminum with about 18½ louvers per inch and vertical strips nearly 1/8 inch wide every inch. This arrangement is a little more effective than *Koolshade's* in stopping direct rays of the sun, but it also interferes much more with light and visibility than the *Koolshade*, and the wide vertical strips were found unpleasant by some persons, to whom they gave an effect similar to being behind bars. Normally the cutting off of light by these screens would not be a disadvantage, since they would be used only on windows facing the sun, but they would tend to darken a room noticeably on cloudy, rainy days. These two kinds of louver screening are not as effective in keeping out insects as standard woven wire screening, but for normal use they would be satisfactory. Finer mesh screen wire of the usual woven type should be used where very small insects are a problem.

"Roll-up" screens

Window screens such as the *Screen-O-Matic* which roll into a case attached to the window sash when the window is closed offer several advantages. With this kind of screen there is no need to remove the screens in order to wash the windows. They may be left in place all winter without detracting from the appearance of the window or cutting off needed light, and they cover only that part of the window opening which is actually open. The screening used in the *Screen-O-Matic* is plastic with the trade name *Lumite* (a gray, opaque plastic material), which is flexible enough to roll up easily inside the case. The case and other fittings are made of aluminum. Unless the spring holds the screening taut, it may sag and allow insects to come in around the edges; with double-hung sash, a baffle must be used between the upper and lower sash to keep insects from coming in

through the space between the sash when the window is open.

* * *

With so many kinds of screens and screening to choose from, no one kind may be said to be the best for all uses. Probably the best screening in most cases, when all factors are considered, will be aluminum screening fastened with galvanized steel tacks (where aluminum tacks are not available), because of its long life, moderate price, and freedom from staining. Since staining and rusting are no problem with *Alclad* and similar aluminum alloys, no painting or varnishing is needed. In hot, very sunny locations, the "Venetian blind" screening may be well worth its price which is four to five times as high as woven wire screening of the same metal or alloy. The householder, however, must give thought to factors such as climate, cost, convenience, etc., before he can choose screens wisely.

* * *

CR acknowledges the very helpful assistance of the Insect Wire Screening Bureau in New York City in preparation of this article. CR, however, is solely responsible for the judgments expressed herein.

Off the Editor's Chest

(Continued from page 2)

of two percent in the field of man-made fibers. Such processes are good so far as they go, but they represent only one small, though important, aspect of evaluating textiles.

Some firms label garments as "washable," but as CR found in a study of men's shirts, this label can be a snare and a delusion. Several shirts so marked showed appreciable shrinkage and their colors bled in the wash water. Furthermore, there are other factors to be considered. The fabric in a garment may be completely washable, but if the garment has shoulder pads that do not withstand washing, buttons that lose their shape in hot water, and trimming which bleeds, the consumer will obviously find the garment completely unsatisfactory after it has been laundered in customary fashion.

There is an obvious need for a universal, usable yardstick for measuring various performance factors in the textile and garment field. Richness and variety of choice in the textile field make it difficult to know what the performance is in all cases. The various processes that accomplish certain desirable results such as "Sanforizing" for the control of shrinkage are not sufficient in themselves to assure all round good performance. The American Standard L22 has been adopted for rayon and acetate fabrics. It provides minimum specifications and test methods for evaluating fabrics according to certain characteristics including fading, crocking, resistance to laundering and dry cleaning, resistance to perspiration, effect of pressing, flammability, and permanency of finish. (Laboratory test procedures alone take up a hundred pages of the 160-page standard.) In the broader field of textiles there is a project approved under the procedures of the American Standards Association to develop standards for all textile fabrics used in wearing apparel and home furnishings irrespective of trade name, fiber, or finish, based on the performance factors set up in L22 for rayon apparel and home furnishing fabrics. The sponsors for this project are the National Retail Dry Goods Association. As Mr. J. Gordon Dakins, executive vice-president and treasurer, put it in an address before the American Association of Textile Chemists and Colorists:

> Let's stop dissatisfaction of the consumer from excessive shrinkage, loss of colors, or permanency of finish, and let's concentrate on how to satisfy the vast public with the craving for new and various styles. Let's eliminate dissatisfaction that can be avoided by applying test methods for evaluation of textiles. Then let each fiber and each fabric fight for preference of the consumer on the sound ground of applied sciences to which the American Association of Textile Chemists contributes so greatly!

The problem of evolving the specifications and methods of test is one for the technical experts. Support for the project, however, needs to come from intelligently voiced criticism by thoughtful consumers who are interested in securing adequate information about the textile

products they buy and in securing adjustment of their complaints about unsatisfactory products which fail to give reasonable service that should be expected from them in use. Consumers, when they get angry, have shown that they have considerable influence in legislative matters. Aroused public opinion over serious injuries and deaths from brushed rayon fabrics that caught fire too readily has brought about some rather stringent legislation with respect to flammability. The Flammable Fabrics Act, an act of Congress which became effective on July 1, 1954, establishes standards for three classes of flammability and provides for test methods as well. The Act is to be policed by the Federal Trade Commission. The legislation forbids the sale of fabrics which are unduly hazardous and provides for the seizure and confiscation of such fabrics. No doubt some of the states will enact similar laws to govern fabrics made and sold within a state, that do not move into other states for sale.

The object of the legislation in protecting young children from injury and death and grownups from injury is praiseworthy, but the execution of the law presents some real problems to manufacturers and retailers; it may even result in the elimination of certain fabrics from the market. For example, sheer silks, which have been used in women's garments, may fail to pass the flammability tests, and cotton organdies, which have been worn for many years and were not considered a particular fire hazard, may also be found too highly flammable under present regulations. There are other difficulties, also. Fire prevention specialists feel that the law does not go far enough; on the other hand, practical men of the textile industry point out that the fabrics which will meet the legal requirements may not meet the fashion requirements. As one critic put it, in humorous fashion, the new regulations practically call for women to wear asbestos. Even the thin silk kerchiefs that teen-agers are given to tying over their hair may be taboo.

Still another difficulty has to do with the testing of the fabrics for flammability. The American Association of Textile Chemists and Colorists Committee on Flammability of Clothing Textiles which did the coordinating work in the preparation of the officially adopted test method found that test results were not reproducible from one laboratory to another even when the official apparatus was used. One of the problems had to do with the kind of Bunsen burner used to ignite the fabric. Even when the committee had standardized the kind of needle valve and the size of the burner aperture, difficulties were encountered because of differences in the design of the base of the burner. This is a sample of the sort of technical problems that arise, and one which is difficult even for experienced textile engineers to work out. Whether or not the test method can be sufficiently simplified to be applied reliably by inexpert personnel is certainly another question to be considered. All these factors indicate the problems that arise in attempts to settle scientific matters by legislative fiat. The voluntary approach is much more flexible, but it should be emphasized to manufacturers and distributors that when consumer needs demand attention and voluntary remedies are not forthcoming, legislation is almost certain to be adopted under public pressure and with public approval in an attempt to deal with a pressing problem.

The matter of evaluating performance of textiles is too complex for the consumer to solve. It is clear, however, that a bad situation is not remedied simply by passing a law. From the standpoint of the trades involved, it would seem wiser that they should by joint study and agreement adopt voluntary standards to correct present unsound practices in the textile field and to assure consumers of good-quality merchandise, *correctly and adequately labeled with information on all the essential performance characteristics necessary for satisfactory service.* The consumer obviously is not pleased with many of the present textiles on the market, or at any rate not sufficiently interested to make extensive purchases. The prompt and speedy adoption of a comprehensive standard of the type of the American Standard L22 for *all* textiles, backed up with informative labels at the retail level to indicate whether a garment or other article is washable in the home washing machine with any good soap or detergent (or can be dry cleaned), is or is not resistant to perspiration, withstands fading in washing, sunlight, and gas fading, and shrinks no more than two percent from its original size, can be pressed with a hot or moderately hot iron, will do much to restore confidence and interest in textile products of all kinds. The consumer is usually not articulate about what she would like to find on the market, but she does refrain from buying when she is not pleased by what is available. The more enlightened elements of the trade can undoubtedly stimulate sales by seeing to it that both "miracle" fibers and "bargain" textiles are replaced by those which carry the suggested labels of the L22 Standard that give assurance to the purchaser of dependable performance.

Latex Paints for Interior Walls

THERE are many people who have been greatly impressed by the advantages and conveniences afforded by the various "latex" interior wall paints that have been offered and widely advertised for interior paint jobs in the home for the past several years. These have been known by a variety of names, such as rubber-base paints, water-thinned rubber-base paints, emulsion and resin-emulsion paints, and synthetic latex paints. Other ways by which they may be distinguished from the customary oil-base paints are by the claims frequently made that they are easily put on with a roller applicator, that the paints dry quickly, that they show no lap marks, the brush may be washed out in plain water, and that there is no annoying paint odor in the room. (A *rubberized* paint is not necessarily a latex-emulsion paint, as some manufacturers are now adding rubber or latex to their regular oil paints; the combination is called a "rubberized" oil paint.)

The sales of the latex paints were estimated to be about 30 to 40 million gallons a year in 1952; this figure, comparable with the total sales of oil paints in 1947, was reached quickly, from sales of only about one-fourth of that figure in 1950.

Many users have been quite pleased with the latex paints, although it is not at all certain that they will be so enthusiastic about them a few years after they have been applied. It must be considered, however, that up to the present time only a few cases have been reported of seriously objectionable performance. Good results can be obtained by the consumer with latex paints of good quality when they are properly used, but it is questionable whether they will give good results on the wall for as long a period of years as good oil paints. It is fairly well established that they are good paints, but nothing to get excited about.

It is not considered good practice to apply latex paints over oil paints, or the reverse. In general, it is wise to use successive coatings on a given wall that are as nearly as possible of the same composition.

In resistance to washing, latex paints perform well after they have been allowed to cure thoroughly (say for a month or more), but may be expected to give poor performance if the washing is rather severe so that it breaks through the coating. In some cases, experience shows, even well-known brands of latex paints do not have good resistance to washing; the problem is perhaps more serious when it is a second paint job on the same surface.

Journeymen painters consider that latex paints are difficult to apply, but actually amateur painters find them easy to apply. Latex and oil paints do have different brushing properties, and, when the amateur uses a new or different paint, he will tend to believe that a latex paint is easier to apply because the advertising has emphasized the point. In point of fact, good application properties not only involve the ability to spread the paint out on the wall, but to spread it out evenly in the right thickness for the particular job in hand, and in such manner that the coating will be of uniform color, sheen, and texture. If these criteria are applied, latex paints must be regarded as difficult to apply with a brush, rather than easy.

One of the ideas that has helped to put over the latex paints is that the brush can be washed out in water. This is true, but it is not a sound reason for changing from a time-tested type of paint to a new or different one. Another advantage that latex paints possess is that their odor is perhaps a good deal less offensive to most people than that of an oil paint. This is a particularly important feature for paint work to be done in office or laboratory spaces, where it is often necessary to put the room to use immediately after the painting is done. This is not necessarily true of all latex paints; cases are reported where the odor was most unpleasant. It has been noted also that in some cases quicker drying may not assure earlier use of an office than when an oil paint is used. Another advantage of rubber-emulsion paints is that they can be well applied to plaster that is too new to be safely painted with wall paints of the oil type, and yet they afford, after a period of aging, good washability characteristics that some other paints suitable for this early application to plaster walls do not have.

Most of the latex paints probably have adequate hiding power if they are correctly applied, but the consumer tends to make them cover too much area, especially when he uses a roll applicator. It may also be the case that, in applying a latex paint, one seems to have applied enough

to give it hiding power when the paint is wet, but that the hiding power will not be so good as with a good oil paint when the paint is dry. It is not safe to assume that—as the advertising is likely to assert—one coat of latex paint will cover properly, whereas a second coat would have been required with an oil paint. Good work will very often require a second coat.

The present view as to the way these paints stand up to washing is that most of the better paints, such as *Spred Satin*, compare favorably with most of the oil paints *provided* the latex paint can stand for at least a month to cure thoroughly. The best flat oil paints give better washability, but unfortunately the manufacturers do not, in general, make them as good as possible in this respect. Latex paints may give trouble in "lifting," if a second coat is applied before the first coat has had several weeks' time to mature. This is contrary to manufacturers' claims that some of these paints can be applied within a day or two of the first coat.

There are some reasons to suspect that latex paints may have passed their peak of popularity. They had an excellent advantage from the marketing standpoint in giving the more aggressive manufacturers something new, and hence easy to promote in advertising, and through this innovation, manufacturers were better able to get a higher markup than was possible with the oil paints—which are now so standardized in the consumer's mind that it is hard to persuade him to pay much more for one brand than another.

Now that many manufacturers are making latex paints, competition is coming in, in the same sense as applies to oil paints, and the special marketing advantage of latex paints is thus being lost. Aggressive marketing people in the paint industry are now looking for something still newer to promote in the way of a flat wall paint, and there are indications that something of this sort is to be expected in the near future. When that happens, they will stop talking about oil paints and latex paints, and push their newest offering as though all previous types were obsolete. This will make the problem of the paint dealer the more difficult because he will have two kinds of allegedly old-fashioned or "obsolete" paint to get rid of.

One possibly serious disadvantage of the synthetic rubber-base paints is that some of them made some years ago did not provide as good a vapor barrier as an oil-base paint. A coating of an impervious oil paint on the walls of rooms sometimes is used to act as an effective vapor barrier in old construction, to prevent migration of water vapor through the interior walls into the wood framing and siding of the house where it can cause damage by rot or cause the exterior paint to blister and peel. (The installation of anything more elaborate than a coating of paint on interior walls would usually be impractical in an old house.) The makers of *Spred Satin* supply an effective vapor sealer which may be used as a prime coat; this is followed by an application of *Spred Satin* itself. Some, but not all, of the emulsion paints as now formulated have been found to give satisfactory vapor-barrier action, but it is believed safer to use oil-base paints where a vapor barrier is wanted, in view of the wider background of experience with them in this use. The vapor barrier action of a latex paint is particularly likely to be insufficient when the paint has been applied somewhat scantily by use of a roller.

When you ask a paint man whether a rubber-emulsion paint can be applied over an oil-base paint, he is likely to reply yes, if the new paint spreads over the old paint without difficulty, dries promptly, and develops no objectionable behavior within a year or two. He is not likely to concern himself with what may happen in the more distant future, for from his standpoint, anything that happens after a year or two will not present a problem to him for adjustment or reimbursement of the customer. The real paint expert considers what may happen 10 or 20 years from now, and is, therefore, not likely to recommend a type of paint which after that time may call for the complete removal of all old paint, or extensive alteration of the interior of the home by use of some new wall surface.

So far as the lasting qualities of rubber-emulsion paints go, no one yet knows what they will be like after 10 years, even after they are first used on a clean surface, and with use of one kind of paint constantly. It is, therefore, taking a distinct risk to consider applying emulsion paint and then an oil paint and then perhaps an enamel paint at some later time. The problem which may develop as a result of such procedure may be a very costly one to solve, 10 or 15 years hence. People are mistaken in assuming, as many do, that because a layer of paint has been hidden under a new layer, the older layer has disappeared and need no longer cause concern to the home owner, or affect the behavior of later coatings. That is not a safe approach in painting problems, and paint experts know that, for the long-run, a series of coats of the same type and composition give a better basis for future painting than coatings of a diversified character applied in succession. Neither is it desirable, in our opinion, to apply a rubber

paint over casein paint or calcimine, even though some manufacturers have asserted that this is permissible.

Rubber, whether natural or synthetic, changes and deteriorates in its properties with the action of light and oxygen, and, while at least one company is now offering a rubber-base paint for outdoor use, there does not seem to be any likelihood that such paint will be immune to deterioration by weathering over a period of years, or that it will give better performance or longer life on exterior surfaces than good oil paints do. (On interior walls, the light that reaches paints is relatively weak and most of it will be filtered through glass so that the action of deterioration referred to may not be a serious problem, in practice, within a reasonable period of years.) The latex paints are made with synthetic elastomers, which means artificial substances having properties somewhat similar to rubber. Light and oxygen affect these in much the same way as they do rubber, although if the type of elastomer is properly chosen, they may be somewhat more resistant to deterioration. It is the view of a well-qualified expert that latex paints are likely not to be suited for use on wood outdoors. Latex paints for masonry outside dries without gloss, but paints without gloss are not the usual choice for outside wood, where a moderate degree of gloss is customary.

The New Record Players

IT CAN BE SAID that high fidelity "arrived," in the sense of wide popular interest in it, in 1953. Soon afterward, such words and phrases as binaural, stereophonic, and 3-dimensional sound found their way into the vocabulary of all who read about phonographs and movies. These words were picked up in advertisements of many radio and television receiver and record player manufacturers and the general public was led to believe that many manufacturers' products incorporated the necessary additional circuits and mechanical elements and indeed did offer concert-hall realism combined with a stereophonic or 3-dimensional quality in their sound output.

Unfortunately, none of the radios, television receivers, or any of the new crop of so-called hi-fidelity phonographs are capable of stereophonic or "3-D" reproduction, even though two and sometimes three loud-speakers are used. Additional speakers, because of their differing positions, serve merely to diffuse or disperse the sound in the room and give the prospective purchaser a reason to suppose something new and different is being offered. While the sound may thus be more pleasing to some, it should not be referred to as stereophonic reproduction, which is far more difficult to achieve, and *cannot* be provided under $500 or something of that order.

Unfortunately, also, there is no widely accepted basis of judgment for the several qualities a radio or television receiver or a record player or tape recorder should exhibit if it is to be truly capable of high fidelity or true, natural reproduction of sound. It was natural, therefore, that the admen should write advertisements for record players selling, in one instance, as low as $29.95, with use of such catch phrases as "Stereosonic Sound" and "life-true tone"—alleged to pour forth from a wafer-thin cabinet which was just barely big enough to enclose a small 3- to 5-inch speaker and the one- or two-tube amplifier supplied. In view of the various alluring claims, many subscribers have become interested in the purchase of what the trade is ofttimes recklessly calling high-fidelity units and ask for our advice to help in choosing one.

Our many tests on high-fidelity components have indicated that the least expensive amplifiers now available which are capable of reproducing to a minimum high-fidelity standard cost between $50 and $60 (a top-notch amplifier may cost well above $200); a packaged record player must contain, in addition to the amplifier, a turntable (usually a record changer), a pickup arm and cartridge, a loud-speaker, and a cabinet which provides a reasonably-sized baffle for the speaker. Accordingly, our replies to inquiries suggest the greatest caution in any purchase of a player at a low price and built to small dimensions which claims high-fidelity reproduction, and a general disbelief in high-fidelity claims for any small or compact phonograph, radio, tape recorder, or TV receiver.

It is readily seen that, if the selling price of a record player capable of reasonable fidelity is to be within the reach of the mass market, certain concessions to quality must be made

in the choice and size of the various parts. Some manufacturers, such as Magnavox and Webster-Chicago, have taken creditable steps to produce a record player capable of what might be termed medium-fidelity reproduction. The quality of output from these players lies between that of the average home radio-phonograph combination and a true high-fidelity reproducing system; it has been attained by a careful choice of components combined with engineering brains and skill in design. The unit does not and cannot, however, provide true high-fidelity reproduction of music. No doubt some of the other manufacturers offer units of similar quality.

Claims for some of the units range from the simple "20-15,000 cycles" for the *V-M 555* at $140 to "Uniform response of from 50 to 15,000 cycles" for the *Webcor "Musicale" 333* at $149.95. Such claims are over-optimistic, particularly as to the low end, and quite unlikely to be fulfilled in practice even by the finest and most expensive record reproducing equipment in which a very large and expensive ($300-$500) speaker is used. It should suffice to say that CR has yet to find *any high-fidelity system at any price* capable of fulfilling either claim, although some very expensive systems ($500-$1000) can approach reasonably near to such perfection.

Until the results of tests now in progress on the medium-fidelity phonographs are published, CR can only advise great caution in the purchase of just about any phonograph that is described as "high fidelity," in the $30 to $200 range, except the *Magnavox Magnasonic*.

It is true that a modern player, properly engineered, should offer sound quality superior to most ready-made record players made 5 or 10 years ago. Strictly high-fidelity results are not to be expected from the smaller units or, in fact, any units in which the space available for speaker baffling is limited to dimensions of the order of 10 x 15 x 15 inches. However, either *Magnavox Playfellow* ($99.50) or *Webcor "Musicale"* ($149.95) may be a satisfactory purchase for those who want to listen to new records and are not satisfied with the reproduction of their present phonograph or radio-phonograph combination. If possible, any new player should be bought on an approval basis, so as to permit the buyer to decide whether in fact it does provide a real and marked improvement in tonal quality over the equipment he already has, when used with the same LP records.

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†indicates that listings of names or brands are included.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines — some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Cue, Daily News (N.Y.), *The Exhibitor, The Farm Journal, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, New York World-Telegram & Sun, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council, *Time, Variety* (weekly).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	6	9	**About Mrs. Leslie**	*dr A*
1	9	1	**Adventures of Robinson Crusoe**	*adv-c AYC*
—	4	10	**Alaska Seas**	*mel A*
—	10	3	**Always a Bride (British)**	*com A*
—	4	6	**Ana-Ta-Han (Japanese)**	*war-dr A*
—	2	5	**Angels One Five (British)**	*war-dr AY*
—	1	4	**Anita Garibaldi (Italian)**	*hist-dr A*
1	3	2	**Apache**	*dr-c A*
—	—	3	**Appointment for Murder (Italian)**	*cri-mel A*
—	6	1	**April 1, 2000 (Austrian)**	*fan A*
—	3	4	**Arrow in the Dust**	*mel-c AYC*
—	3	10	**Bait**	*mel A*
1	5	1	**Barefoot Battalion, The (Greek)**	*war-dr AY*
—	3	5	**Battle of Rogue River**	*mel-c AYC*
—	7	6	**Beachhead**	*war-dr-c A*
—	10	6	**Beat the Devil**	*cri-dr A*
2	7	4	**Beauties of the Night (French)**	*dr A*
4	11	4	**Beggar's Opera, The (British)**	*mus-dr-c A*
—	4	1	**Bitter Creek**	*wes AYC*
—	7	2	**Black Horse Canyon**	*wes-c AYC*
—	2	4	**Blackout (British)**	*mys-mel A*
—	4	6	**Border River**	*mel-c A*
—	9	3	**Both Sides of the Law (British)**	*cri-mel A*
—	8	2	**Boy from Oklahoma, The**	*wes-c AYC*
8	6	2	**Caine Mutiny, The**	*war-dr-c AY*
—	3	4	**Captain Kidd and the Slave Girl**	*adv-c A*
—	8	8	**Carnival Story**	*mel-c A*
—	1	4	**Caroline Cherie (French)**	*dr A*
1	6	8	**Casanova's Big Night**	*com-c A*
—	2	4	**Cat-Women of the Moon**	*sci A*
—	4	3	**Challenge the Wild**	*doc-c AYC*
—	—	8	**Charge of the Lancers**	*mel-c A*
—	—	—	**City is Dark, The (See Crime Wave)**	
—	14	2	**Command, The**	*wes-c AYC*
3	8	—	**Cowboy, The**	*wes-doc-c AYC*
—	7	2	**Creature from the Black Lagoon**	*sci AY*
—	12	3	**Crime Wave**	*cri-mel A*
—	4	8	**Dangerous Mission**	*cri-mel-c AY*
4	3	2	**Demetrius and the Gladiators**	*dr-c A*
—	3	—	**Desperado, The**	*wes A*
—	1	2	**Destination Matrimony (Italian)**	*com A*
3	8	3	**Dial M for Murder**	*cri-mel-c A*
1	4	6	**Diary of a Country Priest (French)**	*dr A*
—	4	5	**Dirty Hands (French)**	*war-dr A*
—	3	2	**Dragonfly Squadron**	*war-dr A*
—	—	9	**Dragon's Gold**	*mel AYC*
—	—	6	**Dreams of Love (French)**	*mus-biog A*
—	7	8	**Drive a Crooked Road**	*mel A*
—	6	3	**Drums Across the River**	*wes-c A*
—	3	6	**Drums of Tahiti**	*mel-c A*
—	3	10	**Duffy of San Quentin**	*soc-dr A*
1	7	6	**Eddie Cantor Story, The**	*mus-biog-c AYC*
—	9	4	**Elephant Walk**	*nov-c A*
6	9	3	**Executive Suite**	*nov A*
—	2	3	**Fangs of the Wild**	*mel A*
—	2	1	**Fighting Pimpernel, The (British)**	*mel-c AYC*
—	10	1	**Final Test, The (British)**	*com AYC*
—	6	3	**Fireman Save My Child**	*com AYC*
1	2	11	**Flame and the Flesh**	*mel-c A*
—	2	3	**Flamenco (Spanish)**	*doc-c AYC*
—	2	5	**Folly to be Wise (British)**	*com A*
—	2	3	**Forty-Niners, The**	*wes A*
—	3	11	**French Line, The**	*mus-dr-c A*
—	—	4	**Fugitive in Trieste (Italian)**	*dr A*
—	2	3	**Genoese Dragnet (Italian)**	*mel A*
—	3	3	**Geraldine**	*mus-com AYC*
—	—	3	**Girls Marked Danger (Italian)**	*dr A*
8	8	1	**Glenn Miller Story, The**	*mus-biog-c AYC*
2	10	2	**Go, Man, Go**	*dr AYC*
—	3	2	**Gog**	*sci-c AYC*
1	7	3	**Golden Coach, The (Italian)**	*dr-c A*
—	—	3	**Golden Idol, The**	*adv AYC*
—	8	4	**Golden Mask, The**	*adv-c A*
—	6	5	**Gorilla at Large**	*mel A*
—	2	10	**Greatest Love, The (Italian)**	*dr A*
—	3	5	**Guilt is My Shadow (British)**	*mys-mel A*
2	9	—	**Gypsy Colt**	*dr-c AYC*

A	B	C		
1	6	6	**Hell and High Water**	*war-dr-c AYC*
—	8	2	**Hell Below Zero**	*mys-mel-c A*
—	5	2	**Hell Raiders of the Deep (Italian)**	*war-dr A*
—	1	12	**Hell's Half Acre**	*mel A*
6	2	1	**High and the Mighty, The**	*dr-c A*
—	2	8	**Highway Dragnet**	*cri-mel A*
1	10	2	**His Majesty O'Keefe**	*adv-c AY*
1	10	2	**Hobson's Choice (British)**	*com A*
3	8	1	**Holly and the Ivy, The (British)**	*dr A*
—	9	2	**Horse's Mouth, The (British)**	*com AYC*
—	4	12	**Indiscretion of An American Wife**	*dr A*
—	2	8	**Intimate Relations (British)**	*soc-dr A*
—	4	6	**Iron Glove, The**	*hist-mel-c AYC*
4	12	1	**It Should Happen to You**	*com A*
—	2	7	**Jesse James vs. the Daltons**	*mel-c A*
—	2	7	**Jivaro**	*adv-c A*
1	2	1	**John Wesley (British)**	*biog-c AY*
—	8	3	**Johnny Dark**	*mel-c AYC*
1	5	7	**Johnny Guitar**	*wes-c A*
—	6	5	**Jubilee Trail**	*wes-c A*
—	2	7	**Jungle Man-Eaters**	*adv-c A*
—	4	1	**Khamishia (Israeli)**	*dr AY*
—	—	8	**Killers from Space**	*sci AY*
4	12	2	**Knock on Wood**	*com-c AYC*
—	2	4	**La Lupa (Italian)**	*dr A*
—	3	5	**La Ronde**	*dr A*
—	7	5	**Laughing Anne**	*mel-c A*
—	4	3	**Le Plaisir (French)**	*dr A*
—	1	4	**Limping Man, The**	*mys-mel A*
—	3	1	**Living It Up**	*mus-com-c AYC*
—	2	5	**Lone Gun, The**	*wes-c AYC*
1	6	3	**Lonely Night, The**	*doc-dr A*
2	11	4	**Long, Long Trailer, The**	*mus-com-c AYC*
—	5	6	**Long Wait, The**	*cri-mel A*
—	5	2	**Loophole**	*mys-mel A*
—	—	4	**Lovers of Toledo, The (French)**	*dr A*
—	9	5	**Lucky Me**	*mus-com-c AYC*
—	1	5	**Lure of the Sila (Italian)**	*mel A*
—	6	2	**Ma and Pa Kettle at Home**	*com AYC*
—	3	6	**Mad Magician, The**	*cri-mel A*
2	3	—	**Magnificent Obsession**	*dr-c A*
—	6	8	**Make Haste to Live**	*cri-mel A*
—	1	8	**Man Crazy**	*soc-dr A*
4	6	4	**Man with a Million (British)**	*dr-c AYC*
—	1	6	**Massacre Canyon**	*wes A*
—	—	4	**Melody of Love (Italian)**	*mus-dr AYC*
2	9	1	**Men of the Fighting Lady**	*war-dr A*
—	12	3	**Miami Story, The**	*cri-mel A*
—	4	4	**Mistress of the Mountains (Italian)**	*dr A*
—	4	6	**Moment of Truth, The (French)**	*dr A*
—	7	1	**Mr. Hulot's Holiday (French)**	*com A*
—	3	4	**My Heart Sings (Italian)**	*mus-dr A*
—	12	3	**Naked Jungle, The**	*dr-c A*
3	7	5	**New Faces**	*mus-com-c A*
5	12	—	**Night People**	*mys-mel-c A*
1	3	2	**On the Waterfront**	*dr A*
1	3	1	**Othello**	*dr A*
3	6	2	**Out of this World**	*trav-c AYC*
—	2	1	**Outcast, The**	*wes-c A*
—	1	2	**Outlaw Stallion, The**	*wes-c A*
—	2	7	**Overland Pacific**	*wes-c A*
—	1	4	**Paris Playboys**	*com AYC*
2	6	3	**Personal Affair (British)**	*mel A*
—	8	4	**Phantom of the Rue Morgue**	*cri-mel-c A*
3	6	2	**Pickwick Papers, The (British)**	*dr AYC*

A	B	C		
—	4	5	**Pit of Loneliness**	*soc-dr A*
—	3	11	**Playgirl**	*dr A*
—	—	3	**Pleasure Garden, The (British)**	*fan A*
—	4	2	**Pride of the Blue Grass**	*dr-c AYC*
3	11	3	**Prince Valiant**	*adv-c AYC*
—	1	5	**Princess of the Nile**	*adv-c A*
—	1	13	**Prisoner of War**	*war-dr A*
—	6	2	**Queen's Royal Tour, A (British)**	*doc-c AYC*
—	4	5	**Racing Blood**	*mel AYC*
—	6	6	**Rails into Laramie**	*wes-c A*
1	12	6	**Red Garters**	*mus-wes-c A*
—	2	2	**Red Inn, The (French)**	*cri-mel A*
—	3	3	**Red River Shore**	*wes AYC*
—	—	3	**Return to Treasure Island**	*adv-c A*
3	6	9	**Rhapsody**	*mus-dr-c A*
1	7	2	**Ride Clear of Diablo**	*wes-c A*
2	7	4	**Riders to the Stars**	*sci-mel-c AYC*
—	8	3	**Riding Shotgun**	*wes-c AYC*
2	13	2	**Riot in Cell Block 11**	*soc-mel A*
—	10	5	**River of No Return**	*mel-c A*
—	3	6	**Rocket Man, The**	*sci AYC*
1	10	4	**Rose Marie**	*mus-dr-c AYC*
2	4	—	**Royal Tour of Queen Elizabeth & Philip (British)**	*trav-c AYC*
1	4	10	**Saadia**	*mel-c AY*
—	6	3	**Saint's Girl Friday, The**	*mys-m-l A*
—	2	9	**Salt of the Earth**	*propaganda-soc-doc A*
—	3	7	**Saracen Blade, The**	*adv-c A*
1	8	6	**Saskatchewan**	*mel-c A*
—	1	6	**Scarlet Spear, The**	*mel-c A*
—	3	3	**Scotch on the Rocks (British)**	*com AYC*
—	2	2	**Secret Assignment (Italian)**	*war-dr A*
—	2	4	**Secret Document (Viennese)**	*dr A*
—	7	2	**Secret of the Incas**	*adv-c A*
—	1	7	**Sensualita (Italian)**	*dr A*
4	2	—	**Seven Brides for Seven Brothers**	*mus-com-c A*
—	8	5	**She Couldn't Say No**	*com A*
—	3	2	**Side Street Story (Italian)**	*dr A*
—	9	6	**Siege at Red River, The**	*mel-c AYC*
—	3	4	**Silver Lode**	*wes-c A*
—	—	3	**Sins of Rome (Italian)**	*dr A*
—	5	1	**Southwest Passage**	*wes-c A*
—	6	—	**Spell of Ireland, The**	*trav-c AYC*
1	5	2	**Spice of Life (French)**	*com A*
—	5	—	**Stormy, the Thoroughbred**	*doc-c AYC*
1	7	6	**Student Prince, The**	*mus-dr-c AYC*
—	4	1	**Susan Slept Here**	*com-c A*
—	2	8	**Tanganyika**	*adv-c AYC*
—	6	3	**Taza**	*mel-c AYC*
—	8	5	**Tennessee Champ**	*com-c A*
—	1	2	**Texas Bad Man**	*mel AYC*
2	4	1	**Them**	*sci A*
4	8	2	**Three Coins in the Fountain**	*dr-c A*
—	2	10	**Three Young Texans**	*mel-c A*
—	9	6	**Top Banana**	*mus-com-c A*
—	4	4	**Turn the Key Softly (British)**	*dr A*
1	8	1	**Unconquered**	*biog AYC*
—	2	3	**Untamed Heiress**	*com AYC*
1	3	—	**Victory at Sea**	*war-doc A*
—	1	4	**White Fire (British)**	*mel A*
—	9	7	**Witness to Murder**	*cri-mel A*
—	2	6	**World for Ransom**	*mel AY*
—	6	8	**Yankee Pasha**	*adv-c A*
—	4	3	**Yellow Tomahawk, The**	*mel-c A*
—	1	2	**Yukon Vengeance**	*mel AYC*

The Consumers' Observation Post

(Continued from page 4)

Behrman's conclusion at the end of 91 days, using 27 women over 35 years of age, that the only clinical change to be observed was a lesser degree of dryness in the skin of the faces of particular individuals. He further suggested that the improvement noticeable could be obtained just as readily through regular use of an emollient cream and that the addition of hormones to such a cream did not noticeably increase the desired effect.

* * *

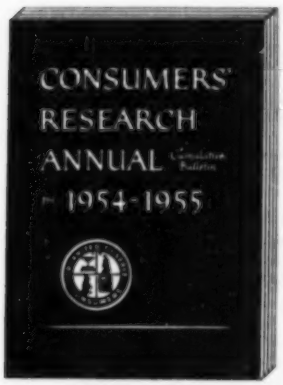
THOSE SALES PARTIES put on in the home by representatives of various concerns who hope to dispose of their merchandise to the guests present have been criticized as a nuisance by one consumer. In a letter to Changing Times magazine, the writer pointed out that in order to keep her friends she was occasionally obliged to attend such parties, but she tried to avoid them whenever possible because there wasn't much to choose from and she could secure a better selection from stores.

* * *

LISTENING IN ON THE PARTY LINE may in the course of time disappear as a rural pastime. Bell Telephone Laboratories' engineers are trying out a telephone system that makes use of transistors to permit several conversations to be carried over a single line without interference. The plan is already at work on long-distance telephone networks, and the engineers believe they can make transistors work economically on lines as short as 5 miles. It will be interesting to see whether the rural party line was a help or a hindrance to good community relations; there's no doubt it provided a widely diffused knowledge of purely private affairs.

* * *

READABLE, HELPFUL, EXPLICIT DIRECTIONS for use are needed on the packages of many products, particularly the household chemical specialties. One trade journal suggests that most people customarily read directions on the package AFTER they use a product, which certainly indicates that directions for use should be given more prominent display on the package than is now the practice, in all too many cases.



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SKIN IRRITATION from the use of soap and detergents was the subject of a recent paper by Louis C. Barail, Ph.D., of New York City. According to Dr. Barail, men are more susceptible to skin irritation than females; blonds more than those with dark complexions. Young people develop more acute dermatitis; in older people it tends to become chronic. An excess of perspiration increases chances of dermatitis and makes existing dermatitis more severe. The skin trouble in most cases is more prevalent in warm weather than when it is cold.

* * *

POODLE CLOTH IS A NOVELTY FABRIC currently fashionable for use in women's coats. It has a looped pile and is usually all wool, although some poodle cloth has a cotton back. The National Institute of Drycleaning has made a number of tests and finds that women's coats of poodle cloth have a tendency to shrink excessively when dry cleaned, although it notes that the style of such coats is usually loose-fitting so that a moderate amount of shrinkage does not make them unwearable. It finds, however, that with special handling poodle cloth coats can be dry cleaned satisfactorily.

* * *

"TOUR AND SHOP" (Elizabeth Gilpin, Editor, Tour and Shop Service, 1715 Walnut St., Philadelphia 3). $2. One of the lures of travel abroad is shopping for native bargains. Many books and travel columns giving advice along such lines have been written for travelers in foreign lands, but this book is the first to present similar information for the United States. The little compilation of 167 pages provides the names of craft shops, markets, and factories which have retail departments, in various sections of the country, and their specialties, as well as the names of factories, such as the Anchor Glove Company in Gloversville, N. Y., for example, which sells gloves in discontinued styles at the factory during certain hours. It also lists the various items for sale that are of special interest in particular localities such as Indian-made craftware available at the Tipi Smoke Curios in Billings, Montana. The idea is a good one, and this book has made an effective beginning, although it is sketchy in spots. The Hunt Glass Works in Corning, N. Y., is listed, for example, but no mention is made of the fascinating spectacle at the Corning Glass plant where the production of Steuben handmade glassware may be watched from a comfortable visitors' gallery. Perhaps as travelers throughout the United States make use of the little volume they will inform the author of particularly interesting shops and factories where purchases may be made to good advantage. The book is well worth buying for those who like to shop as well as "sightsee."

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Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Beethoven: *Concerto for Violin* & **Glazounov:** *Concerto for Violin.* Oistrakh with the State Orchestra under Gauk and Kondrashin. Period SPL 598. $5.95. Standard violin concerti played masterfully. But isn't Heifetz's tone more thrilling? There's a bothersome break in continuity in the Beethoven slow movement which begins on side 1, ends on side 2. **AA B**

Franck: *Sonata for Violin and Piano* & **Prokofiev:** *Sonata No. 1.* Oistrakh (violin), Oborin (piano). Vanguard VRS 6019. $5.95. Sonata playing par excellence. Balance favors the violin and the fidelity, otherwise, is not up to this country's best though the Prokofiev is just about the best yet given by Oistrakh. **AA A**

Handel: *Belshazzar.* Soloists, Chorus, and Orchestra of the State Conservatory of Music in Stuttgart under Grischkat. 4 sides, Period SPL 594. $11.90. This oratorio tells the story of the Babylonian king when Cyrus took his city in 539 B.C. The performance is solid, with satisfactory soloists, a small chorus which makes for clarity, and lively direction. Certainly a superior product, particularly in fidelity, to the new, competitive release on Bach Guild disks with a Berlin group. **A A**

Khachaturian: *Violin Concerto.* Igor Oistrakh with the Philharmonia Orchestra under Goossens. Angel 35100. $5.95. Most widely discussed new Angel release, for it introduces the son of the great violinist David Oistrakh. Judging from this English recording, Igor is an accomplished performer but, notwithstanding the superlatives on the record jacket, I find he does not as yet challenge his distinguished father. The work is Armenian flavored and stands up fairly well 14 years after its first performance. **A AA**

Malipiero: *Violin Concerto.* Kirmse with the Symphony Orchestra of Radio Leipzig under Kleinert & **Rakov:** *Violin Concerto.* Gavrilov with the Symphony Orchestra of Radio Berlin under Rother. Urania URLP 7112. $5.95. Neither of these pieces turns up in a blue moon of concert going, but making it possible to hear them is one of the functions of records. The Rakov is much the easier listening. Fairly well played. **B B**

Puccini: *Turandot.* Grob-Prandl, Ongaro, Zola, Scott, and the Chorus and Orchestra of the Venice Opera Company under Capuana. 6 sides, Remington R 199-169/3. $9.97. Puccini's last, unfinished, work gains immeasurably by the pageantry and splendor of an opera house production. As performances of this music go—and it's particularly high and difficult for the soprano—this is all right. Grob-Prandl as Turandot is shrill, but she hits the notes squarely. The other members of the cast do well enough with Zola as the Calaf sounding best. Conductor keeps the show moving. Recording, uneven. **A B**

Schumann: *Concerto.* Mewton-Wood (piano) with the Netherlands Philharmonic Orchestra under Goehr. Musical Masterpiece Society MMS 43. $1.75 (250 W. 57 St., N. Y. C.). Good, though not definitive performance of a standard, romantic concerto. Particularly welcome at the low price asked. A swish marred part of one side of my pressing and there is some hiss. . . . This firm's recording of the Tchaikovsky violin concerto featuring Odnoposoff and the Mozart *Piano Concerto No. 24* featuring Johannsen, I rate B as to performance but it is better than most records in this price range. **A A**

Tchaikovsky: *The Nutcracker.* Minneapolis Symphony Orchestra under Dorati. 4 sides, Mercury OL 2-101. $10.90. First complete recording of the ballet. You are likely to be more familiar with the *Suite* taken from the ballet and for the most part the *Suite* offers the best music. The performance here is strongly rhythmic but a little heavy handed. Brilliant recording which lacks the warmth the music deserves. **A A**

Tchaikovsky: *Quartet No. 1* & **Glazounov:** *Five Novelettes.* Hungarian Quartet. Concert Hall Society CHS 1183. $5.95. Thoroughly enjoyable, melodic pieces, although not important. The Hungarian Quartet plays them as though they love them. **AA B**

Vaughan Williams: *English Folksong Suite* and *Norfolk Rhapsody* and *Fantasia on Greensleeves* and *Fantasia on a Theme of Thomas Tallis.* Philharmonic Promenade Orchestra under Boult. Westminster WL 5270. $5.95. Beautiful, melodious, richly orchestrated music, among the best of this distinguished composer's short pieces. Warm, devotional playing and conducting, but a little more elaboration of the music's character would be welcome. **A AA**

Wagner: *Tristan und Isolde—Liebestod* & **Beethoven:** *Fidelio—Abscheulicher, wo eilst du hin?* Modl (soprano). Telefunken TM 68003. $2.95. More laboring on the part of the soloist than one should hear and the orchestra is recorded as from a distance. For the first 33-1/3 rpm. release from an outstanding pre-war label that returns to the American scene, this is disappointing. **B A**

Music of Vivaldi, Vol. II. Virtuosi di Roma under Fasano. Decca DL 9679. $5.95. Exceptionally well trained chamber orchestra and soloists play early 18th century Italian orchestral works. **AA A**

Victor Borge—Comedy in Music. Columbia CL 554. $3.95. A superb entertainer has edited three of his actual performances in theaters to present the greater part of his show. The result: a very funny record, particularly suitable for gatherings of persons who know something about classical music, be it ever so little. **AA A**

A Florence Foster Jenkins Recital! (soprano). RCA Victor LRT 7000. $4.67. At a party of musical persons this record is a wow. Miss Foster sings numbers like nobody else has ever sung them in public and particularly far from correct pitch—and that's the fun! Victor's LP has been made from 78's recorded and released under another label some years ago. **C C**

Soft Light Music. The Club Orchestra under Green. Vox VX 580. $3.15. Half hour of French popular tunes. Good background music. No vocals. **AA A**

Music for Waltzing. Vox Sinfonietta under Graf. Vox VX 570. $3.15. *Merry Widow, Gold and Silver, Acceleration, Skaters Waltz* played in strict tempo. **A A**

* * *

I have listened to some of the new Cook Laboratories' recordings (114 Manhattan St., Stamford, Conn.) and highly recommend them for fidelity. The *Morelia [Mexico] Cathedral Organ* (1056) answers the request for a high-fidelity record of short pieces well played on a cathedral organ—pieces by Bach and Vivaldi. Honegger's *Pacific 231* (1068) translates into music an impression of a locomotive. It is coupled with pieces by Debussy and Barber, all of which are played by the New Orchestral Society of Boston which seems to be too small to realize the full potentialities of the Honegger score. *Concert Guitar* (1024) played by Gustavo Zepoll offers 8 classical guitar pieces and 4 pieces of Mexican music of today, played roughly but with character and good musicianship otherwise. *Speed the Parting Guest* (1041) is probably the most popular record issued by this firm. Here 9 musicians play 7 tympani, 5 cocktail shakers, 4 marimbas, 1 wind machine, and many other percussion instruments which add up to the kind of record hi-fi enthusiasts enjoy putting on at a party and whenever they want to impress visitors. These records are 10-inch LP's and they sell for $4 each.

Consumers' Research

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